W E E K L Y R E P O R T S

Of The Division Of
WESTERN IRRIGATION AGRICULTURE
Bureau of Plant Industry
United States Department of Agriculture

(Not for publication without the prior consent of this division.)

Vol. XXXVI January 6 and 13, 1934 No. 1

Huntley

The maximum temperature during the week ending January 13 was 45 and the minimum 11. There was no precipitation. The weather has continued open and mild. The winter so far has brought only occasional light falls of snow with a very few days having subzero temperatures.

The lamb feeders' meeting held at the station on December 22 was attended by about 100 people. Much interest was shown in the results of the feeding tests that were conducted here in cooperation with the Montana Agricultural Experiment Station. This is the fifth year that lamb feeding has been carried on here. In addition to continuing the experiments to determine the comparative feeding value of wheat, corn, barley, and oats, the tests this year included lots in which phosphorous minerals were fed.

In the comparison of the various grains, oats again proved to be superior to other grains in total gains, economy of gains, and finish. These results have been consistent for the four years that this test has been made. As a result, most local feeders are changing their rations and large numbers of lambs are being finished this year on rations consisting wholly or in part of oats.

About 125,000 lambs were fed in the Yellowstone Valley. For the most part these lambs were sent to market in finished condition. Until recent years it was a common practice to "warm up" lambs, i.e., to start them off on local feeds, mainly in the form of roughage and beet by-products, and to move them to corn-belt feed-lots for finishing.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending January 13 was 49.4, with a maximum of 58 on January 3; the average minimum was 21.1, with a minimum of 15 on the 8th, 9th, and 10th. The mean temperature was 35.2. The average hourly wind movement was 1.33 miles. There was .01 of an inch of precipitation on January 1.

The CWA project of leveling land at this station was commenced December 1. At the present time the project is about 25 percent finished, but the funds are half depleted. The original estimate, based on a much lower wage rate than that actually paid, was about double the amount that was finally approved. However, much leveling has been accomplished. Some of the larger sandhills and the longest hauls were undertaken. It was necessary to take down about 320 rods of fence in order to fill a ditch. This fence had been in place since 1907 and naturally was in a bad state. Many of the posts had to be replaced and much of the lower woven wire.

Newlands (cont'd)

The exceptional weather this year has been very favorable for this work. The usual temperatures that are recorded at this time of the year are subzero. This year temperatures are not dropping below 15° above. It has been possible to maintain a full crew of men and keep the sand-hills open for work.

Conditions on the project have shown some improvement. A great many of the farmers have registered as teamsters on the CWA unemployment lists and are now working. The irrigation district has 130 men cleaning drains, reconditioning irrigation canals, and repairing district property. Several other local, county, and Federal projects are underway giving additional employment. The local merchants are much cheered by the improvement in trade. However, the prices of farm products are still so low that most farmers are unable to meet the running expenses of their farms.

In addition to the CWA activity at the station, one fieldman (who is paid from State funds) has been steadily employed manuring plots, cleaning ditches, etc.

E. W. Knight.

Prosser

For the week ending January 6 the maximum temperature was 52, the minimum was 27, and the greatest daily range was 23°. The rainfall amounted to 0.22 inch. The 5 inches of snow that fell the previous week has disappeared.

The Yakima River, which left its banks last week washing out bridges and flooding farm land, has resumed its channel again. All the reservoirs of the Bureau of Reclamation are filled to overflowing. The high water in the Tieton reservoir threatened the dam and 50,000 acre-feet were released. The threat of further floods is greater now that all the reservoirs are full. During the height of the recent flood 52,000 c.f.s. were flowing over the Sunnyside diversion dam. This is about three times the amount usually flowing at flood stage. The large supply of water was due to the unprecedented rainfall in the mountains and the melting snow.

The Prosser Irrigation District is replacing an earthen ditch just north of the station with a concrete pipe line.

Market prices: No. 1 hay, baled, $11 to $12 per ton; U.S. No. 1 potatoes, $15 to $16.50 per ton; U. S. No. 1 onions, $23 to $25 per ton; wheat, 61 cents per bushel; oats, $19.50 per ton; barley, $16 per ton; hops, baled, 30 to 35 cents per pound; eggs, 15to 16 cents per dozen; butterfat, 16 cents per pound.

The returns from Valley produce for 1933 amounted to $24,125,000 as compared with $17,900,000 for 1932.

The maximum temperature for the week ending January 13 was 53, the minimum was 23, and the greatest daily range was 20°. Precipitation of .16 inch in the form of snow fell the latter part of the week, but the snow did not stay on the ground very long.

The weather has been clement enough for farm operations to be carried on. Some farmers in the Prosser district are plowing. At the station manure is being hauled on field E-6 where potatoes were grown last year and on the wheat plots in field E-9.

Prosser (cont'd)

Market prices: U. S. No. 1 potatoes, $17 to $18 per ton; U. S. No. 1 onions advanced $5.00 and are now $30 per ton; choice hogs, 165 to 210 pounds, $4.00 per cwt.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending January 6 was 40, with a maximum of 52; the average minimum was 16, with a minimum of 9. The average hourly wind movement was 10.2 miles. There were one or two snow flurries, but the snow was not sufficient to measure any precipitation.

The total precipitation for the year was 12.93 inches as compared with a 24-year average of 14.35 inches. For the growing season the total was 11.57 inches as compared with a 24-year average of 11.72 inches. This is the third successive year that the precipitation has been below normal. The temperature during December was considerably above normal, the average maximum being 48, the minimum 22, and the mean 35° as compared with a mean of 25° for the 24-year period. The wind movement for the month was also above the average.

The price of fat lambs has been gradually increasing and the top price at Omaha has been around $7.50. A number of the feeders in the valley are marketing their top lambs in order to take advantage of the present price. A larger number of feeders are including pulp in the ration this year; the Mitchell factory has been unable to supply the demand for molasses pulp. Also more of the feeders are experimenting with self-feeders. Most of them report that so far the death loss has been less than with the hand-fed lambs.

Butterfat is now 12 cents per pound; eggs, 15 cents per dozen.

The average maximum temperature for the week ending January 13 was 45, with a maximum of 55; the average minimum was 18, with a minimum of 13. The average hourly wind movement was 9.8 miles. There was about an inch of snow with a measured precipitation of .06 inch.

Little work was done at the station other than the routine of taking care of stock. The CWA and PWA projects have been continued; the work under the PWA is about completed.

The Beet Growers' Association met at Scottsbluff during the week and elected officers for the coming year. Mr. S. K. Warrick was reelected president for the ensuing year. A supplemental contract was adopted which calls for a 50-50 division of all income from beets, pulp, and molasses. Representatives have been calling on the growers to obtain signatures and have met with considerable success. The new agreement is not operative unless 50,000 acres are signed up in the Nebraska district. The same contract is offered growers in the Colorado district and it seems to be meeting with success there. It is reported that in some of the factory districts 90 percent of the growers have signed. The matter has not as yet been officially presented to the Sugar Company.

Lamb prices continue to hold their gains, and there is quite a movement to market. Cattle prices have made some small gains, but still are distressingly low. Butterfat is now selling at 14 cents per pound, and the cheese factory is paying 21¢ per pound in the milk.

James A. Holden.

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Vol. XXXVI January 20 and 27, 1934 No. 2

Newlands

For the two-week period ending January 27 the average maximum temperature was 53.4, with a maximum of 61 on January 23; the average minimum was 21.1, with a minimum of 17° on January 25. The mean temperature was 37.2. The average wind movement was 1.90 miles per hour. There was .01 of an inch of precipitation.

The work at the station during this period has been principally a continuation of the land leveling operations under the CWA. Reducing the number of hours of work per week from 30 to 15 has caused some upset in the original plans. A part of the work undertaken was to raise an irrigation supply ditch some 3 feet in order that gravity water may be obtained for the area being leveled. If the hours had remained unchanged, this part of the work would have been finished by February 15, but under present conditions it may not be completed. This work will have to be completed before water can be obtained by farmers east of the station. The irrigation season will start sometime in March, and the ditch must be clear.

E. W. Knight.

Prosser

The maximum temperature for the week ending January 20 was 53, the minimum was 23, and the greatest daily range was 21°. The rainfall amounted to .21 inch.

The hauling of manure on field E-6 was continued.

At Yakima on January 19 the Yakima Valley Production Credit Association was organized. About 500 farmers and others interested attended the meeting, and a great deal of interest was shown.

Market prices: Potatoes, $18 to $19 per ton; onions advanced $4 per ton and are now $32 to $34; hops, 26 to 30 cents per pound.

The maximum temperature for the week ending January 27 was 61, the minimum was 22, and the greatest daily range was 30°. There was no precipitation. The temperature dropped to 22° one night during the week, but the rest of the time it was above 28°.

The weather remained mild and much farm work was being done in the Prosser district. The Yakima River reached flood stage again during the week and at one time 22,000 c.f.s. were flowing over the Sunnyside diversion dam. Some of the roads were flooded in the upper Yakima Valley. In Snoqualmie Pass of the Cascade Mountains 78 inches of snow is on the ground.

Market prices: U. S. No. 1 potatoes, $21 to $22 per ton; butter-

Prosser (cont'd)

fat, 19 cents per pound.

For the week ending January 25 482 carloads of produce was shipped from the valley as compared with 418 carloads shipped during the corresponding period last year.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending January 20 was 48, with a maximum of 58; the average minimum was 19, with a minimum of 1°. The wind movement averaged 5.2 miles per hour. No moisture was recorded.

Only routine work was performed at the station during the week. The experimental lambs have been making good gains and there has been no loss as yet. Five lots were placed on self-feeders during the week.

The work under the PWA has been practically completed. Under the CWA little more can be accomplished under the new restrictions as to hours and with the early closing of this work.

The county agent is now working on the corn-hog production control program in this county and expects to have it organized very soon. He estimates that possibly 400 hog and corn growers will sign the contracts.

Local conditions are beginning to improve, and there is a much better feeling since prices of some of the farm products are advancing. While not all farmers are sharing in it, an optimistic feeling is prevailing. Lambs advanced to a top of $8.55 at Omaha at the end of the week. It is believed that the top has not been reached and that this will be one of the years when the lamb feeders will make up for past losses.

The potato market made a sensational advance the past week, going from $1.15 a hundred to $1.50. Shipments of potatoes from the Panhandle section have been very heavy, 108 cars going out on the 19th. The movement of seed potatoes to the south is rather heavy; and the seed-growing district in the dry-land section is in a very favorable position with good yields, a good price, and a strong demand.

The price of butterfat is now 15 cents per pound, which at least assures the producer the price of his feed and a small profit. Eggs are declining but are still a little above last year's figures.

The average maximum temperature for the week ending January 27 was 48, with a maximum of 58; the average minimum was 23, with a minimum of 9°. The wind movement has averaged 8.3 miles per hour. No precipitation was recorded.

Several dairy meetings were held in the valley during the week by E. C. Scheidenhelm and N. W. Gaines of the Dairy Husbandry and Economics departments, respectively, of the Nebraska Agricultural College. They were held principally in the interest of the Cooperative Cheese Company of the valley. During the past six months the factory at Gering has made a very good record. It has increased its milk supply over 200 percent and has reduced its overhead expense over 100 percent. In addition, it has paid off a rather large percentage of its old debts.

The price of potatoes has come down some during the week and the buyers are now offering about $1.30. The market at the valley shipping

Scotts Bluff (cont'd)

points has been from 15 to 20 cents above that of other shipping points throughout the West. Growers are holding for higher prices, so few potatoes are being sold now.

The price of lambs holds up and the shipments are increasing. Some 50 or 60 cars were shipped out during the week. The top price has varied from $8.50 to $9.00.

Meetings of beet growers throughout the Nebraska district for the purpose of discussing the new contract the Association will offer the Sugar Company have been well attended, and a large number of growers are signing up. It has not been announced how near they are to the minimum of 50,000 acres.

James A. Holden

Umatilla

Under date of February 1 Mr. H. K. Dean reported as follows:

"We have had a very open winter, which has permitted us to proceed effectively with the grading and ditching work. The minimum temperature so far was 28° above. The late growth alfalfa and grass is as green now as it was in September. The lilac buds have swelled to an inch long, and the Spireas have a few blossoms.

"The water situation, however, is not at all good as there is no snow in the mountains. The Cold Springs reservoir is about half full with fairly good prospects of filling; but the McKay reservoir, with a capacity of 74,000 acre-feet, contains only 25,000 acre-feet, and the flow into it at present is only about 30 second-feet.

"We have completed the grading, strawing, ditching, and setting of turnouts on the 25 acres of land above the feed canal and are practically finished with 9 acres below the canal. The tract above the feed canal has worked up into a very fine piece of land, in fact I think the best on the place. At present we are working down the hill east of the diagonal lane, where I plan to concentrate the rest of the FWA work. I do not plan, however, to seed this latter land this spring, as we will have about all the new plantings we can give good care to in the 25 and 9 acre tracts. It will be seeded to rye so that our work will not be lost, and we can seed it to alfalfa this fall if all goes well.

"An alfalfa variety test on 17 one-half acre plots is planned for the land south of the buildings which has been in sweetclover pasture for the last two years."

Yuma

For the two-week period ending January 27 the maximum temperature was 80, the minimum 32, and the greatest daily range 46°. There was no precipitation.

The winter season so far has been dry and warm. The minimum temperature to date is 28° above zero. Freezing temperatures have been recorded for only eleven days. The precipitation records for the season show .05 inch in November, none in December, and not a drop so far in January.

Cotton picking and ginning on the project are about completed. Up to this time 8,410 bales have been ginned from approximately 14,000 acres.

Yuma (cont'd)

Cotton growers are busy at present signing their cotton acreage reduction contracts. In two instances growers have taken advantage of the unusually warm weather to water their land for 1934 plantings.

Small lots of alfalfa seed have been sold recently at around 7 cents per pound.

Work on the station has included the routine labor of picking and ginning the Pima cotton on the rotation plots, plowing milo and cotton plots, general irrigating and cultivating.

Extra activities include the PWA work projects of concreting ditches and remodeling the sewage disposal plant. Forty-five men are also engaged on the CWA projects of lining canals, pruning dates, and clearing brush.

The yields of Pima seed cotton in the rotation plots for 1934 are as follows:

	Pounds per acre
Maximum	2,360
Minimum	448
Average	1,478

E. G. Noble.

M I S C E L L A N E O U S

A manuscript entitled "Agricultural Investigations on the Newlands (Nevada) Reclamation Project," by E. W. Knight, has been submitted through Bureau channels with a view to publication.

WEEKLY REPORTS

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Vol. XXXVI February 3 and 10, 1934 No. 3

Belle Fourche

The lamb feeding experiments were closed on January 26, and Lamb Feeders' Day was held on Monday, January 29. Although the weather was cold and disagreeable, over 100 people attended. The lambs were shipped from Newell on the morning of February 2, and were sold for $9.35 on the Sioux City market to Swift & Company on February 5. This is the highest price that has been paid for lambs at Sioux City since 1931. The dressing percent varied from 51.3 to 52.3.

There was a good profit on the lambs above feed cost, ranging from $2.32 per head from lot 4 (fed oats, pulp, and alfalfa hay) to $2.84 from lot 7 (fed corn, pulp, and alfalfa hay). The average profit for all the lots was $2.63 per head.

The winter so far has been unusually mild with hardly any precipitation.

Beyer Aune.

Newlands

The average maximum temperature for the two-week period ending February 10 was 57.6, with a maximum of 66 on February 3; the average minimum was 21.2, with a minimum of 14 on February 10. The mean temperature was 39.4. The average wind movement was 1.57 miles per hour. There was .10 of an inch of precipitation.

The prices of agricultural products have improved during this period. Butterfat is now selling at 23 cents per pound, hogs at 4 cents, steers at 5 cents, and lambs at 8 cents.

The CWA activities on the project are being continued on a 15-hour a week basis. This work is helping many people, especially in the purchase of clothes and foodstuffs.

The station activities have been limited to one field laborer and the ten men employed on the CWA leveling project. The one laborer has been hauling manure and cleaning ditches The leveling is about a third completed. With the shortened hours of labor not so much progress can be made as formerly. However, one of the largest hills has been moved and the irrigation lateral is about finished, having been raised to a higher level so that the land being brought under cultivation can be supplied with gravity water.

E. W. Knight.

Prosser

For the week ending February 3 the maximum temperature was 61, the minimum 28, and the greatest daily range 26°. Rainfall amounted to .05 inch.

Market prices: Potatoes, $22 to $25 per ton; U.S. No. 1 onions, $34 to $36 per ton; wheat, 63 cents per bushel; butterfat, 21 cents per pound.

The "good to choice" wool lambs which have been fed on contract at the station were sold for 7 cents per pound.

The maximum temperature for the week ending February 10 was 56, the minimum was 25, and the greatest daily range was 26°. Rainfall amounted to .12 inch. The weather continued mild throughout the week and farm operations were carried on.

The lambs that were fed on contract at the station this year were shipped February 7.

The week was spent in the laboratory determining the salt concentration of soils and the nitrate nitrogen of soil samples taken last spring from the wheat plots.

Market prices: U.S. No. 1 potatoes, $22 to $23 per ton; U.S. No. 1 onions, $24 to $25 per ton f.o.b. car, showing a loss of $10 per ton; butterfat, 23 cents per pound; hogs, medium and choice, 165 to 210 pounds, $4.45 and $4.50 per cwt.

Carload shipments of produce from the valley for the week showed a substantial gain over the corresponding week last year.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending February 3 was 55, with a maximum of 69; the average minimum was 22, with a minimum of 13°. The wind movement has averaged 7.4 miles per hour. No precipitation was recorded at the station.

The weather continued warm during January as it was during December. The average maximum for the month was 46°, which is the highest ever recorded at the station for that month, being equalled only in 1931. The average minimum, 19°, has been exceeded only once, in 1914. The mean temperature for the month was 32° as compared with a 25-year average of 23°.

Four cars of turkeys were sold through the Turkey Growers' Association and were shipped on consignment. The initial payment was about 40 percent higher than the price received for the Christmas turkeys, and the total price will be the most profitable of any of the sales.

The Cooperative Cheese Company held its annual meeting at Gering Saturday. The reports of the various officers were very encouraging as compared with conditions six months and a year ago. The volume of milk has increased about 11,000 pounds daily and the butter churned each week by about 4,000 pounds. A 40 percent reduction in operating expenses has enabled the company to show a much stronger condition than ever before, and the officers are much encouraged. The manager believes that the price of butterfat in milk will probably be about 28 to 30 cents per pound if the present price of cheese remains steady. Butterfat is now selling at 18 cents per pound.

Scotts Bluff (cont'd)

The corn-hog program has commenced to function, and the county agent is beginning to accept applications.

Lambs continue to make a slow advance and the tops are selling at about $9.00. Potatoes dropped off about 20 cents, but at the end of the week had regained about half the loss. No potatoes are moving from western Nebraska points as the growers are holding for higher prices.

For the week ending February 10 the average maximum temperature was 55, with a maximum of 63; the average minimum was 21, with a minimum of 13°. About an inch of snow fell, making .07 inch of precipitation. The wind movement was low, averaging only 5.5 miles per hour.

The work at the station has been of a routine nature. Moving the buildings under the CWA project is continuing, and the hog houses have been placed on the new foundation, but some repairs are to be made before they can be occupied.

The winter has been so mild and open that cleaning out the corrals has been carried on most of the time when labor was available.

The price of lambs continues to advance slowly. At the end of the week the top at Omaha was over $9.00. Shipments of lambs have slowed up somewhat, as it is generally believed that the top has not been reached and lambs are being held until finished.

Butterfat advanced 3 cents during the week and is now selling at 20 cents. Last February it was only 11 cents. The price of cheese has also advanced and is now the highest it has been for several years. The local factory is unable to supply the demand.

James A. Holden.

Yuma

For the two-week period ending February 10 the maximum temperature was 86 and the minimum 36. The precipitation was .07 inch. The mean maximum temperature for January was 73.3 and the mean minimum 38.7. These temperatures are about 3° warmer than normal and about 6° above those for January 1933. The total rainfall for the month was .07 inch, about .40 inch below normal.

These above normal temperatures have continued to date. All orchard and field crops are making an early growth. The first cutting of alfalfa will be about six weeks early this season.

The discharge data for January on the Colorado River as recorded by the Bureau of Reclamation show a flow at Yuma of 210,500 acre-feet. The 32-year average is 509,700 acre-feet.

Station work has included plowing and releveling plots to be planted to cotton, ginning cotton, sawing wood, repairing fences, general irrigating and cultivating. The CWA work on canal lining and pruning dates has continued with a crew of 35 men.

W. G. Noble

WEEKLY REPORTS

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Vol. XXXVI February 17 and 24, 1934 No. 4

Huntley

During the week ending February 24 the maximum temperature was 51 and the minimum 3. The precipitation was .22 inch.

Weather conditions were less favorable for outside work during the week than at any time during the past month. The entire winter has been comparatively open and mild, and work on outside projects has been possible at all times.

Work has continued on the construction of a closed drain, a CWA project, which is nearing completion. Work on the Dairy CWA projects is progressing satisfactorily and will soon be completed. These projects include painting of all dairy buildings, graveling corrals and roads, and fencing pastures.

Most of the lambs that have been on feed during the winter have been shipped to market. Most project feeders operated on a contract basis, taking the lambs in at $5.00 per cwt. and turning them back to the contractor at $6.00 when finished, so that feeders failed to profit from the recent rapid rise in the market. Most of these lambs were placed on the Chicago market at $9.00 to $9.85.

Some field work such as plowing and preparing land for seeding was done on farms during the past two weeks.

Dan Hansen.

Newlands

For the two-week period ending February 24 the average maximum temperature was 54.5, with a maximum of 61 on February 18; the average minimum was 23, with a minimum of 14 on February 10 and 11. The mean temperature was 38.7. The average wind movement was 1.83 miles per hour. There was .36 of an inch of precipitation.

The CWA work of leveling land and constructing irrigation ditches and structures has been continued at the station. The largest sand hill of the entire leveling program is being moved at the present time. In the near future the plans call for the use of six 2-yard dump wagons and 20 horses. A great deal of the soil in this hill will have to be moved about 300 yards. Such long hauls require equipment other than scrapers.

Many of the local and State CWA projects have been materially reduced in personnel. However, the number of men on our project has not been reduced. The present number of men with their equipment could about complete this work by May 1 if they could work 30 hours a week, but the shorter week makes completion of the job by that time impossible.

The work of the station proper has consisted of plowing grain plots and hauling manure. The extremely mild weather has been ideal for such work.

Newlands (cont'd)

The present outlook for an adequate irrigation water supply this summer is not promising. Less than 60,000 acre-feet of water is stored in the dam. The snowfall in the mountains is less than normal, though it carries a higher percentage of water than usual.

E. W. Knight.

Prosser

For the week ending February 17 the maximum temperature was 57, the minimum 25, and the greatest daily range 29°. The weather continued mild during the week with morning frosts.

Most of the week was spent doing laboratory work. Plans were also laid for changes in the station irrigation system.

Several acres of orchard are being pulled out just south of the station. In the Kennewick Highlands district approximately 500 acres of orchard have been removed in the past two years.

The Idaho-Utah Sugar Beet Company called a meeting of farmers at Toppenish recently and discussed plans for producing sugar beets. This company plans to distribute wilt-resistant seed for 1000 to 1500 acres near Toppenish and about 400 acres near Sunnyside. The beets are to be shipped to the plant at Bellingham, Washington, this year at prices paid farmers at Bellingham. If production is successful, a factory may be established again in the valley.

U. S. No. 1 potatoes declined in price again and the demand is light. They are now $19 to $20 per ton in sacks, f.o.b. car.

The maximum temperature for the week ending February 24 was 59, the minimum was 26, and the greatest daily range was 28°. Rainfall amounted to .14 inch. The weather continued mild.

Weeds were burned along the west ditch, and the few remaining locust trees were cut out. The pruning of apple trees on the irrigation plots is going forward rapidly. Wheat ground is being plowed in preparation for seeding.

The lambing season at the station is well advanced, and the production so far has been about 166 percent increase.

Markets: U. S. No. 1 alfalfa hay, $9.50 to $10.50 per ton, baled, f.o.b. car; potatoes, $19 to $20 per ton; onions, $20 to $21 per ton; wheat, 60 cents per bushel. There has been no change in livestock prices.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending February 17 was 54 and the average minimum was 24°. The wind movement was 7.9 miles per hour. For the same period last year the temperatures were 26 and 3°, respectively, and the wind movement 11.9 miles per hour.

A number of the fields in this neighborhood are being harrowed preparatory to plowing and some plowing has been done.

The lambs on test were weighed during the week and found to have made excellent gains, in some cases nearly half a pound per day. The full feed proportions had just been reached. Lambs are moving to market as rapidly as finished, and the price has been gradually increasing; the tops have almost reached $10.

Scotts Bluff (cont'd)

Potatoes are not being marketed, as growers are not satisfied with the present price of about $1.35 a hundred.

The CWA project at the station was closed this week. It was not completed, but the major part of the work was finished.

The average maximum temperature for the week ending February 24 was 32, with a maximum of 53; the average minimum was 11, with a minimum of —1, the lowest temperature so far recorded this winter. The precipitation, coming in about 3 inches of snow, has amounted to .12 inch. The wind movement has averaged 7.6 miles per hour.

The Beet Growers' Association is actively continuing its work of signing up growers for the supplementary 50-50 contract, both in the Nebraska and Colorado districts. It is thought that the necessary acreage, at least in the Nebraska district, will be secured.

At a meeting in Scottsbluff during the week a move was initiated to organize a Farm Credit Association for the Panhandle section of the State.

The top price paid for valley lambs during the week was $9.85 at Omaha.

James A. Holden.

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Vol. XXXVI March 3 and 10, 1934 No. 5

Huntley

During the week ending March 10 the maximum temperature was 57 and the minimum 7°. Precipitation amounting to .37 inch, which occurred in the form of snow, was the first moisture for several weeks. Fields were consequently dry and were being damaged to some extent by soil blowing as a result of high winds.

The dry weather of the past winter has been general over the State and the amount of snowfall in the mountains has been light. Therefore, it appears probable that the amount of water for irrigation will be less than normal during the coming season. In anticipation of this shortage, repairs are being made to the temporary diversion dam which was constructed in 1932 in the Yellowstone River at the intake of the Huntley project canal.

Large wool clips in this section are being contracted for by eastern buyers at 28 to 30 cents per pound. A local firm is offering 7 cents per pound for feeder lambs for fall delivery. These prices are nearly double those of a year ago.

No field work was possible during the week. Station employees were engaged in the repairing of machinery and harness equipment.

Jan Hansen.

Prosser

For the week ending March 3 the maximum temperature was 62, the minimum was 30, and the greatest daily range was 25°. There was a snowstorm during the first part of the week, but the snow did not stay on the ground more than an hour. The precipitation amounted to .02 inch. On March 3 there was a dust-storm of such severity that field operations were stopped.

Water was diverted to the Sunnyside Canal on March 1. Water is expected to be delivered to all parts of the lower valley within three weeks. This will be about two weeks earlier than last year. The old wooden flume at the head of field E-6, where the potato plots were last year, is being torn out to be replaced by a new flume. Field E-6 has been plowed and is ready to be seeded to wheat.

Some of the plum and peach varieties are already in bloom, which is much earlier than usual.

There is considerable water in drains in the Sunnyside district for this time of the year. It is caused presumably by a much later irrigation last fall. Samples of water from several drains between Grandview and Granger, west of Prosser, were taken and the specific conductivity determined. One drain about one-quarter mile south of the station,

Prosser (cont'd)

which is usually dry at this time of the year, is carrying 346 parts per million of salt. Six drains between Grandview and Sunnyside are carrying from 370 to 465 parts per million of salt. One drain between Sunnyside and Granger is carrying 834 parts per million.

For the week ending March 10 the mean maximum temperature was 59.5, mean minimum 30.4, absolute maximum 65, absolute minimum 26, and the greatest daily range 37°. Rainfall amounted to .16 inch. The average wind movement was 2.68 miles per hour.

Water came in the Sunnyside canal at the end of the week. At the station water is not expected for a week or more.

The pipe line running north and south through the apple orchard was removed and is being laid through the pear orchard. Excavating for the new 6-inch concrete pipe at the head of the pear orchard is well under way.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending March 3 was 35, with a maximum of 50; the average minimum was 15, with a minimum of —22°. The wind movement has averaged 7.8 miles per hour. No precipitation was recorded, although there have been several snow flurries, and along the river there was one heavy shower of rain, which, however, did not reach back to the tablelands.

The lowest temperature of the winter, 22° below zero, came during this period. The cold spell lasted only three days, however. The storm was accompanied by about 4 or 5 inches of snow that came without wind and lay evenly on the fields until it melted. It will be of much benefit to winter grain, for in the wheat areas the snowfall was heavier.

During the week the sites from which the buildings were moved have been cleaned up. This was done with labor furnished through the FERA.

During the week the sugar beet question was discussed by Congressman Carpenter at a number of meetings that were held throughout the valley. The growers have a much better understanding now of the situation as it exists in Washington. Mr. Carpenter urged the farmers to cooperate with the association as the best means of improving their position.

The price of potatoes is still declining, and the buyers are offering only $1.10 per cwt. More are selling now and the movement from shipping points in the valley will probably continue steadily. It is estimated that about 35 percent of the crop is still held by growers. ... Lamb prices are still advancing slowly and a top of $10 has been passed. Between 75 and 100 carloads a week are going out of the valley. Heavy lambs are selling equally as well as the handy weights. ... Butterfat and eggs are holding steady at 20 cents and 11 cents, respectively.

For the week ending March 10 the average maximum temperature was 47, with a maximum of 59; the average minimum was 21, with a minimum of 17°. The wind movement averaged 10.2 miles per hour. No precipitation was recorded.

Weather conditions have been very favorable for farm work, which is being started. At the station no field work has been started as yet; only the routine work of caring for the stock is being done. Some labor furnished by the FERA has been cleaning up the grounds.

Scotts Bluff (cont'd)

The week closed with one of the heaviest winds of the winter, but no serious damage was done. In places the lighter soils drifted some, and much of the moisture of the previous week was dissipated. The recent snows have benefited the dry land wheat; most of it seems to be doing very well.

This week 78 cars of lambs were shipped out of the valley at a price around $10. Potatoes are beginning to move freely at $1.10 and $1.15 per cwt.

James A. Holden.

Umatilla

For the week ending March 10 the maximum temperature was 62 and the minimum 29°. Clear weather prevailed, and there was no precipitation.

The Public Works projects of land leveling, ditch digging, pipe lines, etc. have about been completed. The hired teams have been dispensed with, and only two men are being used to finish up odds and ends. Among the results accomplished were laying the rest of the main pipe line and completing the grading of the 160-acre tract, with the exception of about 10 acres. Half of this will be finished with the station tractor and team, but it will not be possible to grade the other half as it is now in a rye variety test.

A rather dense shelter-belt of broad-leaf and evergreen trees has been established just west of the buildings. More than 1000 additional trees are being grown in the nursery until they reach sufficient size for open planting. ... The alfalfa and sweetclover variety tests and rates-of-seeding sweetclover tests have been planted.

Mr. F. D. Wilson, who has been dairy herdsman for the past two years, has resigned to take a commercial position in Mississippi. He has been replaced by Don Sherwood, who was reared on an irrigated farm in eastern Oregon and graduated in Dairying at Oregon Agricultural College in 1933.

H. K. Dean.

W E E K L Y R E P O R T S

Of The Division Of
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(Not for publication without the prior consent of this Division.)

Vol. XXXVI March 17 and 24, 1934 No. 6

Huntley

During the week ending March 24 the maximum temperature was 74 and the minimum 11. The precipitation, which occurred in the form of snow, was 0.37 inch.

Conditions were favorable for field work during the first of the week, and preparation of dry land plots for seeding was started.

A large acreage in the valley is ready for seeding beets, but no contract has yet been offered by the Sugar Company, which is withholding contracts awaiting the outcome of legislation on sugar quotas now before Congress.

Dan Hansen.

Newlands

The average maximum temperature for the three-week period ending March 17 was 68, with a maximum of 79 on March 15; the average minimum was 28, with a minimum of 17° on March 8. The mean temperature was 48°. The average wind movement was 1.91 miles per hour. There was .11 of an inch of precipitation.

The station work has consisted of burning weeds and hauling manure. Seeding will be started next week. The CWA project on the station is still in full swing.

E. W. Knight.

Prosser

For the week ending March 17 the absolute maximum temperature was 77, mean maximum 69.5, absolute minimum 27, mean minimum 33.2, and the greatest daily range 42°. The mean wind velocity was 1.64 miles per hour. Clear weather prevailed throughout the week.

Construction work on the station water distributing system was continued.

Market prices (f.o.b. car) in the Yakima Valley: No. 1 alfalfa hay, $9.50 to $10.50 per ton; U. S. No. 1 potatoes, $16 to $17 per ton; U. S. No. 1 onions, $15 to $16 per ton; oats and barley, $19 and $17 per ton, respectively; hops, baled, 25 to 30 cents per pound; average large white eggs, 10 to 12 cents per dozen; choice hogs, 160 to 210 pounds, $4.60 per cwt.

For the week ending March 24 the absolute maximum temperature was 75, mean maximum 68, absolute minimum 24, mean minimum 37, and the greatest daily range 39°.

Prosser (cont'd)

Soft fruits in the Prosser district were damaged by the low temperature of 24° on March 24. Most of the peaches, apricots, and plums were killed at the station at that time.

Water was diverted to the station March 19. This was about three weeks earlier than the time of delivery the past two years. Alfalfa is now being irrigated.

Two Venturi measuring flumes are being constructed, one to be used for measuring water on fields E-6 and E-8, and the other for the irrigation plots in the apple orchard. Concrete supports are under construction to hold the flume on field E-6.

The only important change in market prices was the 3 cents decline of butterfat, which is now 20½ cents per pound.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending March 17 was 60°, with a maximum of 72; the average minimum was 24, with a minimum of 10°. The wind movement averaged 7.5 miles per hour. There was a light snow amounting to about one half inch, with a measured precipitation of 0.03 inch.

Farm work is a little late this spring due in part to the unsettled sugar beet situation. The Great Western Sugar Company has made no announcement of its 1934 contract, and the Beet Growers' Association has not secured enough acreage to make the 50-50 contract effective. Some of the farmers are going ahead getting ready for beets, believing that the way will be opened for the industry by planting time.

A meeting of the Cooperative Potato Growers' Association, held at Scotts Bluff during the week, was well attended by growers throughout the Nebraska district.

Dr. A. C. Hildreth, of the Cheyenne Field Station, visited the station during the week.

Potatoes have fallen in price and are now selling at 75 to 85 cents per cwt. cash to growers. Prices of lambs have also dropped until the tops are bringing only $9.00.

For the week ending March 24 the average maximum temperature was 50°, with a maximum of 68; the average minimum was 25, with a minimum of 13°. The wind movement averaged 7.3 miles per hour.

The annual Lamb Feeders' Meeting will be held at the station on April 4. This is a feeding period of only 100 days, but the lambs have made such large gains that it is necessary to close the test before the expiration of the 120-day period.

The Turkey Growers' Association has received the last payment on turkeys shipped during the past season. The total amount received this year is about 10 percent greater than the amount received last year for approximately the same number of turkeys. The price received the past season was 14.05 cents in November, 15.9 cents in December, and 17.9 cents in January.

At the station the work has consisted chiefly of cleaning up the grounds and changing fencing for the coming pasture season.

The price of lambs has remained steady around $9.00 a hundred. Potato prices are working downward and buyers are now offering only 70

Scotts Bluff (cont'd)

to 80 cents a hundred pounds. Eggs and butterfat are holding steady at 12 cents and 20 cents, respectively.

James A. Holden.

Umatilla

For the week ending March 17 the maximum temperature was 77 and the minimum was 29.

There has been no precipitation during March, and high temperatures and winds have dried the soil seriously. Unless it rains during the next few days it will be necessary to irrigate all of the new seeding.

Twenty-four one half acre pasture tests, comprising three plots of alfalfa, five sweetclover strains, and sixteen grass and legume mixtures, were seeded.

The grading of land has been continued.

H. K. Dean.

W E E K L Y R E P O R T S

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Vol. XXXVI March 31, April 7 and 14, 1934 No. 7

Huntley

During the week ending April 7 the maximum temperature was 70 and the minimum 27. The precipitation was 0.27 inch.

Field work was possible during the latter part of the week and included the preparation of plots in the dry-land fields for seeding.

Seeding of grains and alfalfa on the project is fairly well completed and land is being prepared for beets, although no seed has been distributed yet by the Sugar Company. The contracting of beet acreage was delayed pending action by Congress on the sugar allotment plan. During the week the company finally offered a contract, but it was rejected by representatives of the Beet Growers' Association. This association includes about 50 percent of the beet growers. The contract, which is similar to the one in effect in 1933, is now being offered to non-members of the association.

Dan Hansen.

Newlands

The average maximum temperature for the four-week period ending April 14 was 72.3, with a maximum of 85 on April 12; the average minimum was 35.2, with a minimum of 22° on April 4. The mean temperature was 53.7. The average hourly wind movement was 2.91 miles. There was 0.17 of an inch of precipitation.

During this period grains have been seeded and also some alfalfa. One general irrigation has been given. The allotment of water to the station this year is about 25 percent of the amount used last year. If this allotment is all that we could expect, it would not be possible to raise more than one crop of hay. However, all water-users are hoping that more will be allotted later. However, if no more water is made available, the station will probably confine its farming activities to keeping the alfalfa alive that was planted last year.

The CWA activities are being continued at this station, with a crew of men and teams moving about 900 yards of dirt during each 15-hour week.

E. W. Knight.

Prosser

During the week ending April 7 the maximum temperature was 83, the minimum was 27, and the greatest daily range was 42°. The precipitation resulting from a rain and hailstorm amounted to 0.03 inch.

Prosser (cont'd)

Construction work on the irrigation distribution system at the station was continued during the week.

The price of old potatoes (f.o.b. car) is now $11 to $12 per ton, sacks furnished, the decline in price amounting to $5.00 per ton during the week.

During the week ending April 14 the absolute maximum temperature was 83, the mean maximum was 75.3, the absolute minimum was 42, and the mean minimum was 47°.

On April 14 the storage water in the reservoirs of the Bureau of Reclamation amounted to 900,906 acre-feet. All the reservoirs are full. The discharge over the Sunnyside diversion dam at the end of the week was 5,810 c.f.s. Because of the advanced season the demand for water has been greater than usual at this time of the year.

Comparison of prices paid to farmers for produce this year and last year

	April 1933	April 1934
Hay (per ton, baled)	$13 - $14	$9.50 - $10.50
Potatoes (per ton)	$14 - $15	$11 - $12
Wheat (per bushel)	45¢	60¢
Oats (per ton)	$16	$19
Barley (per ton)	$13	$17
Hops (per pound, baled)	26¢	22¢ - 26¢
Eggs (per dozen)	10¢ - 12¢	10¢ - 12¢
Butterfat (per pound)	18¢	15½¢

Carl A. Larson.

Scotts Bluff

For the week ending April 7 the average maximum temperature was 52, with a maximum of 69; the average minimum was 29, with a minimum of 21. The average wind movement was 7 miles per hour. The precipitation, coming in the form of sleet, rain, and snow, amounted to 0.48 inch. There was no wind with it, so the moisture was evenly distributed and did considerable good. Both north and south of the valley in the dry land areas the snowfall was much heavier, in places amounting to as much as 24 inches.

The precipitation for the first three months of the year amounted to only 0.41 inch, which is less than half of normal.

The first part of the week being rather inclement no field work was done. Some harrowing of plots in fields K and E was possible the latter part of the week.

The Lamb Feeders' Meeting was scheduled for the 4th, but on account of stormy weather was postponed until the 5th. The day was cold and disagreeable and the attendance was small. However, all present were engaged in feeding and were interested in the results. Mr. Beyer Aune, of the Belle Fourche station, drove down for the meeting. M. L. Baker, Animal Husbandman of the North Platte Station, discussed the results of fattening cattle on alfalfa pasture, and W. W. Derrick, Extension Livestock specialist from Lincoln, spoke on Feeders' Problems.

Scotts Bluff (cont'd)

The average maximum temperature for the week ending April 14 was 64, with a maximum of 77; the average minimum was 34, with a minimum of 20. The wind movement averaged 7.4 miles per hour. The precipitation amounted to 0.19 inch, making a total for the month to date of 0.67 inch. The evaporation averaged 0.149 inch daily.

All of the grain lots in fields K and E have been harrowed and plowing has been started. Fencing of the plots to be pastured during the coming season has been completed.

Nothing definite has been done in regard to the beet situation. The Great Western Sugar Company has been taking some contracts even with the clause giving them the right to cancel the contract any time before August 15, but most of the growers are waiting for action by Congress before signing any contracts. The Holly Sugar Company has offered its growers the same contract as last year, but the growers have refused to accept it and have joined with the Nebraska and Colorado growers in demanding the 50-50 contract. The Holly Company operates in Wyoming in the upper part of the valley.

The prices for butterfat and eggs are slowly coming down, being now 19 cents and 10 cents, respectively.

Summary of Results of Lamb-Feeding Experiments at the Scotts Bluff Field Station, 1933-34

To test the value of different combinations of feeds, the lambs were divided into 14 lots, the first seven lots having 25 each and the last seven 35 each, making a total of 420 lambs. The average weight of the lambs at the beginning of the experiment was about 65 pounds with the exception of those in lot 11 whose initial weight was 47.5 pounds. At the close of the feeding period of 100 days the final weight ranged from a minimum of 88.4 pounds in lot 11 (fed ground corn, cottonseed cake, and alfalfa) to a maximum of 115.5 pounds in lot 13 (fed whole barley, pulp, cottonseed cake, and alfalfa). The average gain in weight per lamb for the entire feeding period varied from a minimum of 24.5 pounds in lot 2 (fed pulp and alfalfa) to a maximum of 50.5 pounds in lot 9 (fed pulp, whole corn, cottonseed cake, and alfalfa).

Alfalfa was included in the ration of all the different lots. The other feeds used were corn (whole and ground), barley. dry pulp, wet pulp, cottonseed cake, bonemeal, and phosphates (commercial and special feed). The lowest cost of feed per 100 pounds gain, $3.25, was in lot 3 (fed pulp, cottonseed cake, and alfalfa). The highest cost of feed per 100 pounds gain, $4.24, was in lot 10 (fed pulp, ground corn, cottonseed cake, and alfalfa).

After the cost of feed, etc. is added to the initial cost, which was $6.10 per cwt., the total cost per lamb varied from a minimum of $5.13 in lot 11 to a maximum of $6.62 in lot 12 (fed pulp, ground corn, cottonseed cake, and alfalfa). The selling weight, after deducting 6 pounds for shrinkage between the feedlot and the market, ranged from a minimum of 82.4 pounds in lot 11 to a maximum of 109.5 pounds in lot 13. The average appraised value of these lambs was $8.75 per hundred pounds, and the actual market price received was $8.70. The lowest profit per lamb, $1.67, was in lot 7 (fed pulp, special feed phosphates, and alfalfa). The highest profit per lamb, $3.04, was realized in lot 13 (fed whole barley, pulp, cottonseed cake, and alfalfa).

James A. Holden.

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Vol. XXXVI April 21 and 28, 1934 No. 8

Belle Fourche

Under date of April 25 Mr. Aune reported as follows:

"The last two weeks have been ideal for all kinds of farm work. The seeding of small grains was finished the first of the week. The beets will be planted at the end of this week. All ground for the other crops is prepared and ready for planting. Contracts have been signed for over 14,000 acres of sugar beets in the district, and a considerable portion of this acreage has already been planted."

Huntley

The maximum temperature during the two-week period ending April 21 was 76 and the minimum 18°. There was no precipitation.

Dry weather continued during this period, and irrigation is required for most crops. Water was turned into the canals on April 16. This is nearly a month earlier than the average date. Alfalfa and pastures, as well as spring-seeded crops, are being irrigated.

The situation with regard to sugar beet contracts remains unchanged. Members of the beet growers' association have refused to accept the contract offered by the Sugar Company, and only a comparatively few non-members have accepted this contract. Less than 3,000 acres of beets have so far been seeded in this territory, which ordinarily grows from 25,000 to 30,000 acres. With the passage of sugar legislation by Congress, conferences between growers and Sugar Company representatives will be resumed and an effort made to arrive at a satisfactory agreement. The season for seeding beets is well advanced; and even though a contract acceptable to the growers is offered, the late seeding will no doubt result in decreased yields of beets.

Station work during this period included seeding of grains, alfalfa, and sugar beets in the rotation plots and in other fields. Ditches are being cleaned and repaired for watering pastures and spring-seeded crops.

Dan Hansen.

Newlands

For the two-week period ending April 28 the average maximum temperature was 76, with a maximum of 85 on April 20 and 22; the average minimum was 39.8, with a minimum of 32° on April 17, 25, and 26. The mean temperature was 57.9°. The average wind movement was 3.15 miles per hour. The precipitation amounted to 0.08 of an inch.

Conditions on the project are rather discouraging. A heavy in-

Newlands (cont'd)

festation of aphids and an expected water shortage will have a detrimental effect on the hay crop. Farmers delayed the first irrigation as long as possible, thinking the dry condition would retard the spread of the aphids. Likewise, water saved in the early spring would be of greater use later in the summer. Each farmer has received notice of the amount of water allotted to him for this year based on the water stored in the dam. However, a storm condition in the Sierras at the present time may result in some increased water allotments being made.

Butterfat is quoted at 22 cents per pound, hogs at 4 cents, beef at 4 cents, lambs at 10 cents, and eggs at 15 cents a dozen.

A recent election for four memberships in the board of directors of the local irrigation district resulted in the election of three new members and the reelection of one member of the old board. It is expected that many changes in the former policies of the board will be made.

Work at the station has consisted of cleaning irrigation ditches and irrigating the fields. The C.W.A. activities at this station ended on April 26, the work being about 60 percent completed. It is expected that the greater portion of this newly leveled area will prove to be as productive as any land on the station. When the leveling is finished about 27 acres of irrigable land will be added to the station area. As a general rule in this western country the "blow-sand" of sand dunes, which comprises a large portion of the soil of the area being leveled, is highly productive. The hills being moved in this leveling operation contained some 50,000 cubic yards of dirt, of which some 20,000 yards remain to be moved. Some of the hauling distances are rather long, approaching 400 yards. The most efficient method that has been tried on the longer hauls is the use of dump wagons loaded by Fresno scrapers under a sand-trap. Three 4-horse Fresnos worked over the trap loading, and five 4-horse dump wagons did the hauling. The hauling cost an average of 25 cents per cubic yard moved. This cost was maintained even under the high wages for men and horses made necessary by the C.W.A. regulations. Under normal conditions the costs could be reduced 25 to 30 percent.

E. W. Knight.

Prosser

The absolute maximum temperature for the week ending April 21 was 90, the mean maximum was 80.7, the absolute minimum was 37, the mean minimum was 45.3, and the greatest daily range was 43°.

The alfalfa plots in field E-7 and the alfalfa basin plots were irrigated during the week. Many changes in flumes are being made, and work is still in progress on other irrigation structures at the station.

U. S. No. 1 (old) potatoes declined $3.00 per ton during the week and are now $7 to $9 per ton, f.o.b. car. The price of butterfat has been fluctuating considerably for a few weeks, but during the past week it increased 3 cents per pound and is now 18½ cents. The price of choice hogs, 165-210 pounds, declined $1.00 per cwt. during the week and is now $3.60 per cwt.

For the week ending April 28 the maximum temperature was 90, the minimum was 37, and the greatest daily range was 41°. The total rainfall for the week was 0.28 inch.

The first irrigation of the season was applied to the orchard irri-

Prosser (cont'd)

gation plots April 28. A Parshall measuring flume was installed to replace the submerged orifice. The 90° angle notch weir is still being used to measure surface run-off water.

U. S. No. 1 old potatoes decreased in price to $4 per ton. The grower must pay a sorting charge of $2 per ton and buy his sacks at the rate of $1.00 per ton.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending April 21 was 63, with a maximum of 81; the average minimum was 29, with a minimum of 27. The wind movement has averaged 6.5 miles per hour. The evaporation has amounted to a daily average of 0.180 inch. No precipitation was recorded at the station.

Farm work is proceeding rather slowly throughout the valley because of the uncertainty regarding the sugar beet contracts. Many farmers have their beet land prepared and are awaiting a decision as to the contracts. A large portion of the grain acreage has been seeded.

Beet growers are still signing the supplementary agreement demanding the 50-50 contract. and it seems that the Nebraska district is inclined to favor that contract. There is a doubt about the other districts and it is possible they may be willing to accept some kind of a compromise.

At the station the grain plots have been prepared for planting. Some corn had been left in the shock in the fields, and this has been put in the silo for summer use.

Water was turned into the main canal of the Pathfinder district the last of the week. This will go through to fill up the supplementary reservoirs—Lake Alice and Lake Minatare. No report as to the condition of the Pathfinder reservoir has been received, although there is probably around 300,000 acre-feet stored as compared with about 400,000 acre-feet last year at this time. It is unofficially reported that the snowfall in the mountains is below normal, but some heavy snows have fallen on the watershed in Wyoming during the past month.

The average maximum temperature for the week ending April 28 was 70, with a maximum of 78; the average minimum was 41, with a minimum of 33°. The wind movement has averaged 8.4 miles per hour. The daily evaporation has been 0.215 inch.

Three additional laborers were employed the first of the week. All grain and beet plots in field K were prepared for planting, and the grain was all seeded. Most of the beet plots were planted.

Late Saturday afternoon a telegram was received from Mr. S. K. Warrick, who was attending a conference of sugar beet growers, processors, and Department officials, stating that the beet problems had been adjusted and that growers should begin planting at once. Some beets had been planted prior to this time, but in several instances damage was done to them by vandals plowing furrows through the fields and driving tractors and trucks through the fields, all of this being done at night. Business interests in the valley are more optimistic now that the sugar beet problem has been settled.

Scotts Bluff (cont'd)

The weather has been extremely dry, and there is not enough moisture in the soil for the beets to emerge. Early seeded grain is up, but it will soon need moisture. In the dry land areas the wheat is beginning to suffer, and grass on the range is starting very slowly.

The prices of both cattle and sheep are gradually getting higher, and feeders are beginning to market their livestock. Not many lambs are left in the valley, but it seems that the late ones are going to strike as good if not a better market than the earlier ones. Butterfat has advanced to 20 cents a pound, but eggs have dropped to 10 cents a dozen.

James A. Holden.

M I S C E L L A N E O U S

Mr. C. S. Scofield left for Riverside, California, on May 1 after spending a week in Washington.

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Vol. XXXVI May 5 and 12, 1934 No. 9

Huntley

The maximum temperature during the two-week period ending May 5 was 81 and the minimum 31°. No precipitation was recorded.

Drought conditions continued during this period. There has been no rainfall since early in April. Irrigation is required for the starting of all spring-seeded crops. While the supply of water is adequate so far in the Yellowstone Valley, it is probable that there will be a serious shortage later in the season. Following a winter of very light rainfall, range conditions are poor and there is a serious lack of both feed and water for range stock.

The controversy over sugar beet contracts and acreage was settled, and the seeding of beets was in progress in all sections during the latter part of this period. The reduction under the allotment plan was about 2,000 acres for this territory, which means that about 28,000 acres will be seeded to beets. With the contract offered by the Company and payments to be made under the A.A.A., it is expected that the beet crop will bring about $6.50 per ton.

Station work included the seeding of grains and the irrigation of alfalfa, grains, pastures, and beets.

For the week ending May 12 the maximum temperature was 94 and the minimum 29°. The precipitation was 0.35 inch.

This rainfall was the first since April 2 and was of benefit mainly to such crops as sugar beets and grains that were irrigated recently to provide moisture for germination of the seed. Winter wheat on dry lands was benefited only slightly; in many cases the crop was already destroyed by drought and has been used as pasture for cattle. Heavy winds early in the week damaged beet stands to some extent and also injured winter grains.

At the station beets, grains, and alfalfa were irrigated. Land was prepared for seeding beans, potatoes, and oats in the rotations. Hogs and sheep were placed on the pasture plots of alfalfa and sweet clover in the rotations.

Dan Hansen.

Newlands

For the two-week period ending May 12 the average maximum temperature was 78.2, with a maximum of 89 on May 6 and 11; the average minimum was 43, with a minimum of 34° on May 2. The mean temperature was 60.6. The average wind movement was 3.99 miles per hour. There was a trace of precipitation.

Newlands (cont'd)

The water situation on the project remains unchanged. Few storms have occurred recently in the Sierra watersheds and little additional water is reaching Lahontan Dam for storage. The 25 percent of usual requirements that was allotted to farmers early in the spring for irrigation purposes has not been increased. In the majority of cases this allows two irrigations on the basis of the acreage irrigated last season.

This shortage of water will, in all probability, result in about a third the usual yield of hay. It is expected that hay prices will be high next fall. If the prices of dairy products do not increase, dairymen may have a rather unprofitable winter.

In order to conserve water the station has found it necessary to reduce its farmed area. Some of the areas in process of reclamation by irrigation and other treatments have been temporarily abandoned. It is hoped in this way to save 25 acres of alfalfa that was seeded in 1933. Also in order to reduce the water requirements the plots usually seeded to corn for silage purposes will not be planted.

To provide feed to take the place of that usually obtained from silage, the State has commenced purchasing hay. One hundred tons have been bought and stored at the station. A new hay chopping machine has been ordered. As soon as it is delivered, hay chopping will be started. The storage barn will be filled to make room for additional purchases of hay.

On May 5 200 turkey poults one day old were received. They are being brooded at the station in preparation for a turkey-feeding experiment to be conducted by the State. This year six pens of turkeys will be fed varying amounts of protein in their feed. The results of the feeding experiment last year indicated the need for more data on this subject. The object of these experiments is to produce a quick, light weight, matured turkey by using certain feeding rations.

The work at the station has consisted of one general irrigation of the reduced area now being farmed and general field work such as cultivating, cleaning ditches, and destroying weeds.

E. W. Knight

Prosser

The maximum and minimum temperatures for the week ending May 5 were 72 and 38°, respectively. The mean maximum and mean minimum were 67.3 and 45°. The greatest daily range was 31°. Rainfall amounted to 0.23 inch, falling in four showers.

Owing to the recent rains the reservoirs of the Bureau of Reclamation are still well filled. A total of 900,949 acre-feet is stored in the reservoirs of the Bureau of Reclamation.

During the last week a custom cannery was begun in the vicinity of Prosser, which offers a canning service to farmers and townspeople who wish to preserve their perishable products for later use. A custom cannery that was started in Kennewick has now grown into a very large size commercial cannery. Asparagus is one of the products that is canned in the Prosser-Kennewick districts.

The main activity during the week was orchard irrigation.

Hops increased 2 to 3 cents per pound and are now 26 to 29 cents per pound baled, f.o.b. car. Combination grade old potatoes, with sacks furnished, are being sold for $4 to $5 per ton, f.o.b. car.

Prosser (cont'd)

The temperatures for the week ending May 12 were as follows: Maximum 81, mean maximum 71.5, minimum 33, mean minimum 44.3, and the greatest daily range 41°. Rainfall amounted to 0.01 inch.

On May 12, 1933, there were 530,584 acre-feet of water stored in the reservoirs of the Bureau of Reclamation as compared with 889,395 acre-feet on May 12 this year.

Routine field plot work was performed during the week.

U. S. No. 1 old potatoes are selling for $8 to $10 per ton, sacks furnished.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending May 5 was 78, with a maximum of 89; the average minimum was 64, with a minimum of 42° The precipitation was 0.29 inch, making a total for the growing season of 0.96 inch. The wind movement averaged 6.1 miles per hour. The evaporation was 0.189 inch daily.

The mean temperature for the month of April was 48½° as compared with 44° last year and a 23-year average of 45½°. The precipitation was 0.67 inch as compared with 3.20 inches last year and a station average of 1.84 inches.

Moisture is needed very badly by all crops. Alfalfa and sweet clover have made a very good growth; but if rain does not come soon, pastures will be very light and the first cutting of alfalfa very short.

At a meeting of the ditch companies of the valley it was decided to hold back irrigation as long as possible in the hope that rains would be sufficient to germinate seed. Water was turned out of the Interstate canal the first of the week and has not been turned into the Farmers canal as yet. Only the smaller ditches with early priorities are running water at all and it is largely for livestock.

During the week most of the sugar beets have been planted, and some 60,000 acres have been reported by the Great Western Sugar Company. This is about 10,000 acres less than last year's acreage.

All the grain, beets, alfalfa, and sweet clover plots in fields F and E have been planted. Only the grain has come up, but it is making little growth, and the other crops will not start until rain comes or they are irrigated. It is not yet known when water will be made available.

Only about 35 carloads of lambs are left in the valley and most of them will be shipped out soon. The price is still around $10.

For the week ending May 12 the average maximum temperature was 83, with a maximum of 94; the average minimum was 46, with a minimum of 32°. The wind movement averaged 7.6 miles per hour. The daily evaporation was 0.276 inch. No precipitation was recorded at the station.

There have been a few scattered showers over the valley, but no general rains or enough any place to do very much good. Sugar beet planting was finished during the week. Water has been run on the south side in some of the smaller ditches for the past month. Some of the alfalfa acreage has been irrigated, and a part of the beet ground was irrigated before plowing. The Farmers canal and the Enterprise canal, both on the

Scotts Bluff (cont'd)

north side, are running small heads at the end of the week. The inflow into the Pathfinder reservoir has gradually increased until it is now greater than the outflow, so the amount in storage is increasing.

The rest of the lambs that have been on feed were shipped at the end of the week. They have made very satisfactory gains since going on the self-feeders.

James A. Holden.

W E E K L Y R E P O R T S

Of The Division Of
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Bureau of Plant Industry
United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVI May 19 and 26, 1934 No. 10

Huntley

During the two-week period ending May 26 the maximum temperature was 94 and the minimum 34. No precipitation was recorded.

Drought conditions continued during this period, and there was a continued heavy demand for irrigation. Alfalfa and grains are being irrigated for the second time, and sugar beets are also in most cases receiving a second irrigation before thinning. Irrigation canals are filled to capacity, and the supply of water so far has been adequate. With the coming of low water in the Yellowstone River it is planned to construct a permanent diversion dam at the intake of the Huntley canal. This will probably insure a full supply of water for irrigation throughout the season, even though the supply of water in the river is expected to be lower later in the year than at any time in the history of the project.

Station work during the week included mainly the irrigation of all late-seeded crops, including potatoes, oats, corn, beans, and also the second irrigation of beets and alfalfa.

Director F. B. Linfield of the Montana Agricultural Experiment Station and Superintendent George Morgan of the Havre station were visitors here on May 26.

Dan Hansen.

Newlands

For the two-week period ending May 26 the average maximum temperature was 81.5, with a maximum of 92 on May 22; the average minimum was 42.8, with a minimum of 36° on May 13. The mean temperature was 62.1. The average wind movement was 3.25 miles per hour. There was .03 of an inch of precipitation.

The severe infestation of aphids affecting alfalfa on the Newlands reclamation project has about spent its force. Some localities are also badly infested with alfalfa weevil and grasshoppers. The Bureau of Entomology has three men working in this area: one on aphids, one on the alfalfa weevil, and the third on methods for controlling grasshoppers. Farmers are being instructed how to use poisoned mash to kill grasshoppers. The bran and poison for the mash preparation is being furnished by the Federal Government. Any farmer is entitled to receive the amount that is necessary to treat his cropped area.

The estimated cost of the treatment in this locality, if the farmer purchased the bran and poison, would be 22 cents per acre. It takes about 10 pounds of mash to treat one acre. However, it costs the landowner nothing except the time required to apply the treatment. From a moving vehicle one man can distribute the mash over 10 acres in one

Newlands (cont'd)

hour, it is estimated. This, of course, requires an additional man to drive.

The entomologist in charge of this work estimates that one flake of bran will carry enough poison to kill one grasshopper, or .00034 milligram of sodium arsenate. Poultry would not suffer any particular damage from such a small amount of poison as they would get in the dead grasshoppers they could eat during feeding periods. In some localities rather exhaustive tests have been conducted to determine the effect of such a feeding, but no harmful results have been noted.

E. W. Knight.

Prosser

Temperatures for the week ending May 19 were as follows: Maximum 89, mean maximum 79.6, minimum 37, mean minimum 43.6.

During the week the wheat, basin, and orchard irrigation plots were irrigated.

The only notable change in the price of farm commodities is that of hay, which declined in price to $6.00 per ton in the stack.

The temperatures for the week ending May 26 were as follows: Maximum 93, mean maximum 86.3, minimum 32, mean minimum 46.7, greatest daily range 46°.

Routine office and field work was performed during the week.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending May 19 was 83, with a maximum of 97; the average minimum was 45, with a minimum of 32°. The precipitation for the week amounted to 0.37 inch, making a total for the season of 1.33 inches. The wind movement averaged 4.9 miles an hour. The evaporation was 0.295 inch daily.

The weather has been extremely dry and hot. The precipitation coming the first of the week was general over the project, but it was not enough to do a great deal of good. It is estimated that about 60 percent of the sugar beet acreage is up. The balance will have to wait for additional rain or for water to irrigate the beets up.

It has been announced that water will be turned into the Pathfinder canal on May 23 and will be available for irrigation between the 26th and 28th. It has been necessary to limit the water and the amount has been fixed at 0.8 of an acre-foot per acre. Water will be available in the laterals until about June 12 when it will be shut off until early in July, at which time it will again be available for irrigation.

The lambs shipped to market brought the top price for the day, $8.75, having an average weight of 105 pounds.

For the week ending May 26 the average maximum temperature was 80, with a maximum of 94; the average minimum was 46, with a minimum of 32°. No precipitation was recorded at the station. The average wind movement was 7.6 miles per hour. The daily evaporation was 0.276 inch.

The dry weather has continued. A cool wave brought a little relief from the high temperatures of the previous week, but the average

Scotts Bluff (cont'd)

was still considerably above the normal for this time of the year. Conditions are becoming more serious all the time. It is believed that at least 60 percent of the sugar beet acreage is definitely lost. It may be that an irrigation will improve this condition, but at the best it can do no more than bring the plants up, for without subsequent rains the crop may not be saved.

During the week the corn has been listed on the Walker tract, and the potato plots in fields K and E have been plowed and ditched for irrigation as soon as water is available. Water was turned into the main canal sooner than was expected and was in the laterals on the 24th. A small head was delivered to the station on the afternoon of the 25th, and a few beet plots were irrigated to see if the seed would germinate. It is feared that the light showers the first part of the month were sufficient only to germinate the seed. In the seeped areas and under the small ditches along the river bottoms there has been some irrigation, and in these places there is a fair stand of beets. But under the Pathfinder many of the farmers are planning to replace the beet acreage with potatoes or corn.

The wheat crop in the valley will be almost a total loss due to the drouth and insect damage.

James A. Holden.

Yuma

The maximum temperature for the two-week period ending May 19 was 112, mean maximum 104, minimum 54, mean minimum 60, and the greatest daily range 52°. No precipitation was recorded. Temperatures higher than normal have been recorded for each month since January 1. The excess for May so far is 151°. From January 1 to May 19 the excess was 845°.

These abnormal temperatures have advanced the season on all growing crops. Irrigation needs have been earlier on many of the spring plantings.

The second cutting of alfalfa on the project has been harvested. Prices averaged about $8.50 per ton baled, f.o.b. farms. The acreage of alfalfa cut for hay at this time indicates that less seed will be made this season.

The weather conditions that have prevailed this spring have been unusually favorable for cotton plantings. The early warm weather, with the almost total absence of high winds, has produced excellent stands and rapid growth. In some instances the stands were damaged by cutworms and ground beetles after the cotton had been thinned.

The flow of the Colorado River has been below normal since the first of the year. At one time there was not sufficient water available for the crop needs of the Imperial Valley at the intake at Hanlon Heading Reports from up river indicate that the 1934 flood season reading at Yuma will be less than 10,000 second-feet. A normal discharge for the late spring run-off is around 60,000 to 100,000 second-feet.

The winter grain crops on the station and project have all been harvested. Local prices for wheat are around 90 cents per cwt. The Imperial Valley has completed its flax harvest on approximately 11,500 acres. While some of the better fields averaged 30 bushels per acre, the average will be about 25. The first prices quoted were about $1.70

Yuma (cont'd)

per bushel.

The final planting with Pima cotton of the date-of-seeding test was made on May 15. All cotton plots have been thinned, and the stands this year are better than usual. Pima plantings off the station include 25 acres on the Wm. Cooch farm for pure seed increase, and approximately 300 acres scattered in the Yuma, Gila, and Mohawk valleys. The station will gin cotton from about 40 acres, and the remainder will be hauled to the Salt River Valley for ginning.

Station work has included the harvesting of winter grains, plowing grain stubble plots, hauling manure, thinning cotton, harvesting the second cutting of alfalfa, repairing irrigation structures, general irrigating and cultivating.

E. G. Noble.

WEEKLY REPORTS

Of The Division Of
WESTERN IRRIGATION AGRICULTURE
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Vol. XXXVI June 2 and 9, 1934 No. 11

Belle Fourche

Report for the month of May

The total precipitation during May was 0.30 inch, which is the lowest on record for that month and is 2.8 inches below normal. The evaporation for May was next to the highest on record, a total of 7.62 inches, as compared with 8.302 inches in May 1911 and a normal evaporation for May of 5.464 inches. The mean temperature of 65°, 11° above normal, exceeded the previous highest mean temperature for May by a margin of 5°. The temperature rose above 90° on 11 days in May 1934 as compared with a total of 15 days in May during the previous 26 years, no other May having more than 3 days with a maximum temperature of over 90°. On five consecutive days during the last week in May the temperature was 95 to 100°.

Due to the extreme heat and drought, all sugar beets and corn had to be irrigated up. These crops are coming up with a good stand. This spring the largest beet acreage on the project, over 14,000 acres, was planted. Due to a shortage of irrigation water much of this acreage will have to be abandoned. The total number of acres cannot be stated at this time.

The streams in the Hills are very low; consequently, there is a shortage of irrigation water both in the Spearfish Valley and in the Rapid City district.

Beyer Aune.

Huntley

The maximum temperature during the week ending June 9 was 84 and the minimum 41°. The precipitation was 0.78 inch. The total rainfall during April and May was 0.62 inch, the normal amount for that period being 3.32 inches.

This rainfall was the first to be recorded here since May 11 and was of benefit mainly to irrigated crops, such as sugar beets, that were irrigated "up". Beets, in most cases, have been irrigated two and three times prior to thinning. In some sections of the State the rainfall of last week was much heavier than it was around Huntley, and it is reported to be sufficient to benefit ranges.

Harvest of the first cutting of alfalfa was started on the project during the week. This crop is about two weeks earlier than usual and is rather light. Hay is selling at $8 to $10 per ton.

The thinning of sugar beets is well under way on the project. The unfavorable season has resulted in a comparatively high loss in acreage due to stand failures. The total area in this territory will probably be less than 25,000 acres, whereas the original contracted amount was 29,000 acres.

Huntley (cont'd)

Station work included irrigating, first cultivation of row crops, and beet thinning.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending June 9 was 71.4, with a maximum of 81 on May 27; the average minimum was 43, with a minimum of 35° on June 3. The mean temperature was 57.2°. The average wind movement was 4.05 miles per hour. Precipitation amounted to 1.12 inches.

An acute water shortage still prevails on the project, but a little improvement has occurred. The additional 5 percent allotment of water recently made brings the entire allotment up to 30 percent of normal. A rain on June 4 and 5 brought 1.06 inches of precipitation, which did not quite equal one irrigation but was ample for pastures and grain.

The present outlook is for a small first crop of hay due mostly to pest damage and a below normal second crop. The cool weather and pests have so retarded growth of the first crop that it was thought best by many farmers to get it out of the way and thus have some water to irrigate the second crop. Generally first crop haying is underway during the last of June. There is little expectation that any water will be available after August.

The Federal Government has finished its campaign of grasshopper poisoning in this locality. The amount of bran and poison allotted has been used. Many farmers report that the war on the grasshoppers has been successful and that little further damage to crops is being done. In certain localities of the State some poison bran remains to be scattered.

Drought relief funds are now available for some areas of the State. Shipments of cocoanut meal are being received for cattle and sheep on the range. So far none of these funds have been spent in the Fallon area. About 9,000 tons of hay remains on the project as a carry-over from last year and the year previous.

The work at the station has consisted of one partial irrigation, cleaning ditches and levees of weeds, and harvesting the first cutting of alfalfa. The State recently purchased a new John Deere hay chopper, and a man is employed chopping hay. At present the barn is being filled with hay. Power to operate the hay chopper is being furnished by the station's McCormick-Deering tractor.

E. W. Knight.

Prosser

The temperatures for the week ending June 2 were as follows: Maximum 99, mean maximum 83, minimum 37, mean minimum 49.2, and the greatest daily range 44°. A thunder shower occurred May 29 resulting in 0.25 inch of precipitation. The storm approached cloudburst proportions just west of Prosser on the Horse Heaven ridge. The run-off water from this shower washed out the West Prosser irrigation canal.

On June 2 885,935 acre-feet of water was impounded in the reservoirs of the Bureau of Reclamation. This is an ample supply for the entire irrigation season.

Prosser (cont'd)

The alfalfa plots on field E-7 and on four of the flood basins were cut during the week. The yield of the first cutting on three plots of field E-7 was as follows:

Plot	Tons per acre field-dry hay	Net acre-inches of water applied
6	2.24	15.2*
7	1.87	11.1
8	1.61	7.07

*Fall irrigated.

In general the alfalfa hay crop this year at the first cutting is much poorer than usual in quality and quantity. There is an abundant supply of cheat and also second-year grain from nurse crops used with the new seeding last year. The winter was so mild that the nurse crops were not killed.

The price of butterfat advanced 2 cents per pound during the week and is now 18½ cents. The price of wheat advanced 4 cents per bushel and is now 70 cents. The prices of other commodities remained the same.

The maximum temperature for the week ending June 9 was 90, the minimum was 40, and the greatest daily range was 37°. Rainfall amounted to 0.21 inch. On June 7 a shower of 0.2 inch occurred. The rain was quite general throughout the entire valley.

The latter part of the week planting of potatoes was begun on the irrigation plots in field E-5. The orchard irrigation plots were irrigated also during the week.

During the week ending June 6 122 carloads of cherries were shipped from the valley. The price has been 5 cents per pound. Last year at this time no cherries were shipped. Recent rains caused very little damage to cherries in the Prosser district.

Carl A. Larson.

Scotts Bluff

For the week ending June 2 the average maximum temperature was 88 and the average minimum was 52°. The precipitation was 2 inches, bringing the total for the growing season up to 3.33 inches. The evaporation averaged 0.271 inch daily. The wind movement was 7.1 miles per hour.

The latter part of the week brought showers to practically all parts of the valley. Saturday night there were heavy rains from Scottsbluff east, assuming torrential proportions in places. Along the river the showers were accompanied by destructive hail and wind. Telephone lines out of Scottsbluff were all down, the highways blocked, and crops were severely damaged.

At the station there was 1.71 inches of rain and considerable hail. Beets were just coming up after irrigation and it is not possible as yet to tell just what damage was done to them. Some of the fields on the Walker tract were washed rather badly. In addition to giving the potato crop a good start, the rain will help feed prospects materially. With another irrigation in July it may be possible to produce some potatoes, corn, feeds, and forage even though the season may turn out to be a dry one.

Scotts Bluff (cont'd)

The month of May has been unusually warm. The average maximum was 83 as compared with 66 last year and a 23-year average of 69°; the average minimum was 47 as compared with 40 last year and a 23-year average of 42°. The mean temperature for the month was 9½° above normal. The precipitation for May was only 0.79 inch, the average being 2.68 inches.

Water has been run continuously throughout the week and was used to the best advantage. The beet, potato, and corn plots have been watered and some of the grain and alfalfa plots have been irrigated. With the rains at the end of the week the soil is in as good condition as could be expected with the shortage of water.

The average maximum temperature for the week ending June 9 was 82°, with a maximum of 89; the average minimum was 50, with a minimum of 40. The heavy rain on Saturday of last week was followed by a 0.20 inch precipitation on Sunday, making a total rainfall of 3.53 inches for the growing season. The normal for this period is 5.53 inches. The daily evaporation was 0.285 inch. The wind movement averaged 7.2 miles per hour.

Water was run throughout the week and most of the alfalfa and sweet-clover fields were given light irrigations. No water was run on the potato land as the rains of last week put it in good shape and most of the plowing had been done. The potatoes in the time-of-digging test were planted during the week and preparation of ground for the main crop was continued.

James A. Holden.

Yuma

For the two-week period ending June 2 the maximum temperature was 104, minimum 52, and the greatest daily range 46°. No precipitation was recorded. For the month of May the mean temperature was 5.6° above normal.

The discharge of the Colorado River at Yuma for the month of May was reported to be 833,800 acre-feet. This is the lowest figure on record for that month. The 32-year average is 2,480,000 acre-feet.

The second crop of alfalfa on the project has all been harvested and a large proportion of it sold to coast markets. As practically all of the alfalfa acreage will now produce seed, no more hay will be cut for the market until next fall. The cantaloup harvest is well under way, with about 700 carloads to be shipped out.

Cotton on the project is making a fine growth. The drop in mean temperatures during the past two weeks has helped to bring the plants to a fruiting stage. The stands are above normal. The first payment on the cotton acreage reduction contracts was delivered to the growers on June 1.

Station work performed during this period included the harvesting of the third cutting of alfalfa, plowing wheat and barley stubble plots, hauling manure, repairing ditches and sewer system, cleaning up grounds, cultivating and hoeing cotton, general irrigating and hoeing.

Secretary Wallace and party made a short call at the station on May 29.

E. G. Noble.

WEEKLY REPORTS

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Vol. XXXVI June 16, 23, and 30, 1934 No. 12

Belle Fourche

Report for month of June

The total precipitation during June was 3.65 inches, which is 1.05 inches above the 25-year average. The total from January 1 to June 30 was 6.68 inches, which is 2.11 inches below normal. The principal rains occurred on June 6 (1.7 inches), June 16 (0.71 inch), and on June 24 (0.47 inch). Some precipitation was received on 12 days in this month.

The mean temperature for June was 66° compared with an average of 65°. The maximum temperature was 96° and the minimum 43°.

Harvesting the first cutting of alfalfa was started on June 11 and was completed on June 27. The maximum yield was obtained in rotation 8-b, 2.1 tons per acre, and the average yield was 1.16 tons per acre.

Most of the sugar beets were thinned during the month. There were good stands on all plots, even though all the beets had to be irrigated up.

The contract for the construction of the artesian well was let to Goodstein & Miller, of Casper, Wyoming. The contract provides for a well 3300 feet deep if it is necessary to go to that depth to get a satisfactory flow of water. The size of the pipe is to be 6-5/8 inches at that depth. Setting up the well drilling machinery was started on June 23 and actual digging operations will start the first part of July.

Climatic and other conditions were very favorable during June for crop growth both on dry and on irrigated lands. There was a sufficient amount of rain to fill up the dams on the range, thus relieving the acute situation of a water supply for livestock. Some baled alfalfa was sold direct from the windrow in the field at $10 per ton.

Beyer Aune.

Huntley

The maximum temperature during the week ending June 25 was 88 and the minimum 41. The precipitation was 0.18 inch.

Light showers during this period were not sufficient to benefit crops but were rather damaging to first cutting alfalfa, and the hay will be of only fair quality. The crop is also rather light. Some hay is being baled from the field and shipped to drought areas in Montana and neighboring States. The price is from $6 to $8 per ton in the field.

Wool in the Huntley wool pool was consigned during the week to a Boston firm. A down payment of 20 cents a pound was received for the wool and an additional payment of 3 to 5 cents will probably be made. This pool consists of about 5,000 fleeces with a total weight of 50,000 pounds and includes the clip from about 40 farm flocks on the project.

Huntley (cont'd)

Construction has not yet been started on the Huntley diversion dam, although most of the material is at the site. The river is still sufficiently high to fill the canal to near capacity. The flow of water in the river has been aided by heavy rains in the mountains during the past ten days.

Station work during the week included the harvest of first cutting alfalfa and irrigation of grains, hay, and sugar beets.

Dr. Hoover, of the Department of Agriculture, and Mr. J. M. Stephens, of the Division of Dry Land Agriculture, were visitors at the station on June 17.

Dan Hansen.

Newlands

For the two-week period ending June 23 the average maximum temperature was 84.3, with a maximum of 91 on June 17; the average minimum was 52.3, with a minimum of 41° on June 25. The mean temperature was 68.3. The average wind movement was 3.24 miles per hour. There was 0.63 of an inch of precipitation during this period.

The rainfall recorded for the month of June to date has been 1.69 inches. About 1 inch fell during June 4, 5, and 6, and the rest on June 13, 17, and 18. This is the heaviest rainfall ever recorded in this locality during June. It has materially benefited the grain growers and has been of some advantage to the alfalfa growers. In addition, the temperatures have been ranging below normal. The rainfall and lower temperatures have resulted in some saving of irrigation water. About 45,000 acre-feet is still in storage. This amount with careful use should furnish water during July and possibly a part of August.

Some farmers have used their water allotment, but many others have some remaining. Those who have enough water remaining to give one thorough irrigation to the second crop of hay should produce a much larger second crop than first crop. The earlier estimates of a 40 percent crop of hay on the project this year will in all probability be exceeded. The rains of June seem to indicate that another 10 percent of the usual yields can be expected.

Churchill County, in which this station is located, has been listed as a drought relief area, but not one needing immediate aid, which some other counties in the State are receiving. These counties are primarily in the beef cattle and sheep areas in the eastern part of the State.

Some encouragement is shown in the farm produce markets. Butter is now selling at 22 cents a pound and eggs at 19 cents a dozen. The pork and beef market prices remain unchanged.

Station work during this period has consisted of cutting the first crop of hay and manuring plots Y-12, 13, 14, 15, and 16. It is planned to disk under the sweet clover cover crop and manure on these plots. Steps are being taken to obtain a suitable disk harrow for use with the station tractor.

E. W. Knight.

Prosser

The temperatures during the week ending June 16 were as follows: Maximum 100, mean maximum 90.5, minimum 41, mean minimum 51.3, and the greatest daily range 45°.

Most of the cherries in the Yakima Valley have been picked, but packing is still in progress. Last year no cherries were shipped during the week ending June 14, while this year 167 carloads were shipped during the same period.

The temperatures during the week ending June 23 were as follows: Maximum 93, mean maximum 80.7, minimum 40, mean minimum 47.1, and the greatest daily range 46°.

Routine plot irrigation work was performed during the week.

Visitors during the week were B. B. Bayles, Assistant Agronomist, Division of Cereal Crops and Diseases; George A. Mitchell, Assistant Agronomist, and J. F. Martin, of the Pendleton Field Station.

Temperatures for the week ending June 30 were as follows: Maximum 94, mean maximum 83.2, minimum 39, mean minimum 48.4, and the greatest daily range 43°.

Work during the week consisted of cultivating and thinning corn and the regular routine with the irrigation plots.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending June 16 was 85, with a maximum of 93; the average minimum was 51, with a minimum of 49°. The average wind movement was 6.7 miles per hour. The average daily precipitation was 0.273 inch. The rainfall amounted to 2.21 inches, making a total for the season of 5.74 inches, which is only about 8 percent below normal for the period.

During the week there have been general rains practically over all western Nebraska and eastern Wyoming. The week before the eastern part of Nebraska had good rains, so that moisture conditions are temporarily very good over the State.

At the station the Walker tract and the plots in field K have been planted in potatoes. There will be a large acreage of potatoes on the Walker tract as much of the ground that was planned for other crops was held back on account of moisture conditions. The alfalfa seeded on that tract is coming up to a very good stand.

Grasshoppers are a serious menace this year, and a large quantity of poison mash, to be used in combatting them, has been shipped in by the State Relief Administration.

With labor furnished by the SERA work was begun this week on the potato cellar, which will be 40 x 80 feet and about 7½ feet deep.

The average maximum temperature for the week ending June 23 was 84, with a maximum of 93; the average minimum was 53, with a minimum of 51°. The rainfall during the week amounted to 0.11 inch, making a total for the season of 5.85 inches. The average daily evaporation was 0.233 inch. The wind movement amounted to an average of 6.4 miles per hour.

Moisture conditions continue encouraging. There have been scat-

Scotts Bluff (cont'd)

tered showers over the valley and the surrounding range country, and grass is looking much better. Crops under irrigation are making very good growth. Beet thinning is about completed. The beet acreage is estimated by some of the Sugar Company officials as about 50,000 acres, much of which is, however, a poor stand. The best of the stands at this time are about the condition as of June 1 under normal conditions.

The work at the station has consisted of planting potatoes. The plots in field E were completed. The potatoes in the cooperative work with Mr. Werner of the Horticultural Department at Lincoln were planted on the Walker tract. The seed potato project being carried on in cooperation with the Certified Potato Growers' Association was begun, and the dry land acreage was planted on the Walker tract. There will also be some potatoes planted for certification under irrigation, the work of certifying them to be done by the association.

The excavation for the potato cellar, being built by SERA labor, is about 75 percent completed.

James A. Holden.

Yuma

The maximum temperature during the two-week period ending June 16 was 96, minimum 58, and the greatest daily range 47. A trace of precipitation fell on June 6. The temperatures during June have been below normal. This is the first two-week period that this has occurred this year. The months of March and May have been the warmest in 60 years.

The cities in the Imperial Valley are storing water, for the valley is facing a possible serious water shortage during August and September. James H. Gordon, meteorologist at Yuma, reports the Colorado River is falling rapidly at the present time. The usual spring rise has been very slight as the snowfall in the upper watershed last winter was very light. In addition, the very light rainfall during the spring has reduced the Colorado River to the lowest stage in 64 years. Officials of the Imperial Irrigation District report that unless there are heavy rains in the upper basin during the next two months, a serious water shortage is likely to develop not only for livestock consumption and irrigation, but also for human consumption.

The barley in the rotations was threshed the latter part of May. The average yields for the 19 plots was only 13.9 bushels per acre, which is the lowest average yield during the 12 years the rotation experiment has been conducted. The unusually warm winter was favorable for most plant growth; however, the barley did not do well for some reason. The sweet clover responded to the warm weather by making an early growth which checked the barley in those plots where they are grown together. The sweet clover, however, has not made very big plant growth, for it began to flower and set seed early.

Station work performed during this period consisted of threshing barley from D-31-32, cultivating cotton, plowing for corn and grain sorghum, harvesting alfalfa hay on the rotations, roguing cotton, and general irrigating.

Max E. Crannell.

M I S C E L L A N E O U S

Mr. S. H. Hastings left Washington on June 26 to visit the field stations of this Division in the Northern Great Plains and the Pacific Northwest.

WEEKLY REPORTS

Of The Division Of
WESTERN IRRIGATION AGRICULTURE
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Vol. XXXVI July 7 and 14, 1934 No. 13

Belle Fourche

During the week ending July 7 the maximum temperature was 92 and the minimum 42°. The precipitation amounted to 0.56 inch.

Work at the station during the week consisted of finishing thinning sugar beets and corn, destroying weeds, and general cleaning up around the premises.

Messrs. Scofield, Hastings, Noble, Holden, Hansen, and Harris visited the station July 2 to 4, inclusive.

During the week ending July 14 the maximum temperature was 94 and the minimum was 52°. The precipitation amounted to 0.15 inch.

During the week all the sugar beets, potatoes, and corn were irrigated. The rest of the time was used in preparing for the farm picnic, which was held on Saturday, July 14. This was the nineteenth picnic held at this field station. The weather conditions were ideal, and about 1230 automobiles checked in at the gate during the day. The M. E. Ladies' Aid of Newell served meals at the station during the day. The following program was carried out:

Vaudeville Acts by Aerial Troupe
Pageant "We Are Americans", presented by 4-H Clubs under the direction of Miss Agnes M. Hansen, Home Extension Agent
Concerts by the Belle Fourche "Cowboy" Band
Address by Congressman Theo. B. Werner
Baseball Game - Newell vs. Belle Fourche
Horseshoe Pitching Contest
Sports for the Children
Pavilion Dance

The new machine shed has been completed. Work on the artesian well was started on July 5. The first 200 feet of surface casing has been put in.

Beyer Aune.

Huntley

The maximum temperature during the week ending July 7 was 90 and the minimum 40°. The precipitation was 0.07 inch.

The continued drought made the demand for irrigation heavy, and with a drop in the flow of water in the river and consequent inability to fill the canal to capacity it has been necessary to restrict somewhat the delivery of water to farms. This shortage, however, has not been

Huntley (cont'd)

very serious and crops on the project are in fair condition.

Construction was begun on the temporary dam at the Huntley canal intake. It is expected that this dam will hold the water supply up to near capacity.

The writer attended the conference of field men at the Belle Fourche station during the week. Mr. Hastings and Mr. Noble visited the Huntley station during the latter part of the week. Dean F. B. Linfield and Prof. Clyde McKee, of the Montana Agricultural College and Experiment Station, visited this station on July 6.

Station work during the week included irrigation of all crops and the harvest of grains on the dry-land rotation plots.

Dan Hansen.

Newlands

The average maximum temperature for the three-week period ending July 14 was 88.7, with a maximum of 96 on June 30, July 1, 11, and 12; the average minimum was 47.6, with a minimum of 39 on June 27. The mean temperature was 68.1. There was 0.03 of an inch of precipitation. The average wind movement was 3.30 miles per hour.

Prices for farm products have showed a slight improvement during recent weeks. The shortage of alfalfa has resulted in an increase in the price of hay. Butterfat is bringing 23 cents a pound, eggs 20 cents a dozen, mutton $4.75 a cwt., beef $5.50 a cwt., and hogs $5.25 a cwt.

The water situation is still acute without any prospect of change. Some farmers have a few feet of allotted water remaining unused. Some are reserving the remaining water for fall wheat, others for an irrigation of alfalfa during the late fall as a precaution against another dry winter.

Work at the station has consisted of destroying weeds, cleaning ditches, cutting barley, and finishing first crop haying. The highest yield per acre of alfalfa was 5,397 pounds from plot A, while the lowest yield was 689 pounds from plot Y-4. The average alfalfa yield was 2,757 pounds per acre.

Mr. C. S. Scofield was a station visitor from June 23 to 25.

E. W. Knight.

Prosser

The temperatures for the week ending July 7 were as follows: Maximum 95, mean maximum 91.6, minimum 50, mean minimum 51.8, and the greatest daily range 43°.

The orchard and corn irrigation plots at the station were irrigated.

There was no change in the market price of farm commodities during the week.

Temperatures for the week ending July 14 were as follows: Maximum 92, mean maximum 87.7, minimum 45, mean minimum 40.7, and the greatest daily range 42°.

Prosser (cont'd)

The alfalfa irrigation plots on field E-7 and the C and D basin plots were cut during the week.

The price of butterfat increased 1 cent a pound and is now 19½ cents per pound. The price of wheat increased 7 cents a bushel and is now 67 cents a bushel.

Visitors at the station during the week were as follows: S. H. Hastings, Washington, D. C.; E. C. Johnson, Director of the State Experiment Station at Pullman; and E. L. Overholser, Head of the Horticultural Department of the State College at Pullman.

Carl A. Larson.

Scotts Bluff

For the week ending July 7 the average maximum temperature was 87½, with a maximum of 96; the average minimum was 56, with a minimum of 51°. The precipitation during the week amounted to 0.25 inch, making a total for the season of 6.98 inches. The wind movement averaged 5.9 miles per hour and the daily evaporation 0.284 inch.

Potato planting was continued on the Walker tract during the week, and the corn on that place and the sugar beets on the rotation plots were cultivated. An extra force of laborers was employed and the hay crop was put in the stack. The yield was very good and the quality of the hay, especially from the plots in field K, was good. The yields varied from 2.48 tons an acre on the 3-year plot in rotation 64 to 1.6 tons on the 2-year plot in rotation 62, the average yield being 2.02 tons an acre.

Work has also progressed on the excavation for the potato cellar, and it will be ready for the forms next week.

The Superintendent and Mr. Harris accompanied Messrs. Scofield, Hastings, and Noble to the Belle Fourche Field Station at Newell, South Dakota, where a conference was held.

There has been little change in the price of farm products recently. Butterfat has held steady at 20 cents a pound and eggs at 10 cents a dozen. The price of hogs has made a good gain, and cattle have held fairly steady. One ranch sold all of its 4-year-old steers locally at $90 a head, and one load of fed steers from the valley topped the Chicago market at $11.25 a cwt.

The average maximum temperature for the week ending July 14 was 96, with a maximum of 102; the average minimum was 59, with a minimum of 54°. Although no precipitation was recorded at the station, there have been scattered showers in the dry land areas north and south of the valley but not enough to alleviate the drought conditions. The wind movement has averaged 4.6 miles per hour, and the daily evaporation has been 0.302 inch.

Water was turned on the middle of the week, and sugar beets and corn in field K were irrigated. Water will probably be available most of next week. At the end of the week the combined storage in the Pathfinder and Guernsey reservoirs was 166,000 acre-feet, with an inflow of 90 second-feet.

Scotts Bluff (cont'd)

Drought conditions over the entire State are serious. High temperatures (a maximum of 118 in the eastern part of the State) have prevailed and no relief is promised. In this valley conditions are bad now, but timely rains could save potatoes and corn and would probably make a fair beet crop.

Harvesting of small grain has commenced and some good yields have been reported. A 16-acre tract of wheat near Bayard averaged 53 bushels an acre. The first cutting of hay has been better than was expected, and the second cutting in many sections appears to be good.

James A. Holden.

M I S C E L L A N E O U S

Mr. C. S. Scofield arrived in Washington on July 12. He expects to be located here for the next several months.

WEEKLY REPORTS

Of The Division Of
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Vol. XXXVI July 21 and 28, 1934 No. 14

Belle Fourche

Report for the month of July

The total amount of precipitation during July was 1.75 inches as compared with a normal of 2.40 inches for the 25-year average. The principal rains occurred on July 25 and 26. The maximum temperature was 102 and the minimum 42.

Harvesting of the second cutting of alfalfa was completed on July 28. The maximum yield of alfalfa in the irrigated rotations was 1.96 tons per acre, the minimum was 0.69 ton, and the average yield was 1.16 tons per acre. The harvesting of wheat, oats, and barley was completed on both the dry and the irrigated land.

On July 28 a meeting of the 4-H Club was held at the station. About 125 boys and girls, together with their leaders, were present. H. M. Jones, Club Leader for the State, and Beulah Rodgers, Home Demonstration Agent from Brookings, and the County Agents from Lawrence, Butte, Harding, and Meade Counties attended this meeting.

The artesian well has been sunk and cased to a depth of some 600 feet. Considerable difficulty has been encountered by caving, and from now on it will be necessary to follow up the drilling with casing every 20 or 40 feet. The present formation is a bluish shale.

Beyer Aune.

Huntley

During the week ending July 21 the maximum temperature was 102 and the minimum 56. No precipitation was recorded. The weather continued hot and dry during this period with daily maximum temperatures ranging from 98 to 102.

While the demand for irrigation water has been heavy, it has been possible to make water deliveries to users without serious delay. The flow of water in the canal has been held up to near capacity through the construction of a temporary diversion dam at the canal intake.

An outbreak of curly-top in sugar beets has occurred in nearly all sections of the local factory district. While the infestation is not yet very serious, it will, no doubt, affect yields to some extent. This is the first time that this disease has occurred on this project. Its present appearance is thought to be due to the fact that the past two winters have been especially open and mild and consequently favorable for the leaf hopper or "white fly" that transmits the curly-top disease. Entomologists and others familiar with the situation are of the opinion that a normal Montana winter will probably destroy the leaf hopper and rid the section of curly-top in the future.

Huntley (cont'd)

The annual Huntley project picnic was held on July 21. The attendance was estimated at 2,000 people, which is a larger number than has attended in recent years. Senator Burton K. Wheeler and Representative Roy E. Ayers, of Montana, were the principal speakers. The usual picnic program was carried out.

During the week ending July 28 the maximum temperature was 95 and the minimum 55. The precipitation was 0.56 inch.

This was the first rain since early in June, and it furnished temporary relief from the extreme heat that has prevailed during most of July. This rain also relieved temporarily the demand for irrigation water, and for the first time this season water was turned back through the spillway.

Harvest of grains and of second cutting alfalfa was started during the week. All crops are making excellent growth. Such crops as beets, beans, and corn are farther advanced than usual for this season of the year. The damage to beets from the curly-top infection appears to be less serious than was at first expected and will probably result in only light losses in yields.

Station work included the harvest of early grains and second cutting alfalfa and the irrigation of sugar beets, potatoes, and corn.

Director F. B. Linfield, of the Montana Agricultural Experiment Station, was a visitor on July 23.

Dan Hansen.

Newlands

During the two-week period ending July 28 the average maximum temperature was 93, with a maximum of 104 on July 28; the average minimum was 51.6, with a minimum of 47° on July 16 and 21. The mean temperature was 72.3°. During this period there was no precipitation, and the wind movement averaged 2.40 miles per hour.

The problem of irrigating on this project has reached an acute stage. Only about 15,000 acre-feet of water remain in storage, but some 42,000 acres of crops are needing water. Many farmers have already used their entire allotment of water for this year. Others have conserved their small portion by using it only on the better producing areas of their farms. Early in the season many acres of the poorer types of soil were left unwatered. As this station abandoned some 30 acres, enough water remains on our allotment for one more irrigation. As soon as the second crop of hay is harvested the last irrigation will be given.

Second crop haying is well underway on the project. However, there are many farms that will produce a very small, if any, second crop due to the lack of irrigation water. In all probability there will not be enough of the third crop to harvest. The little growth attained will be used as fall pasture.

The station work during this period has consisted of cutting weeds, harvesting alfalfa and wheat, and hauling manure.

Mr. S. H. Hastings visited the station on July 18 and 19, at which time plans for the future development of this station were discussed.

E. W. Knight.

Prosser

The temperatures during the week ending July 28 were as follows: Maximum 105, mean maximum 95.6, minimum 48, mean minimum 58.6, and the greatest daily range 44°. An unusually high minimum was experienced for one 24-hour period during the week when the temperature did not fall below 72°.

The second cutting of field-dried alfalfa hay is yielding about 3 tons per acre this year, whereas it usually yields from 2 to 2½ tons.

The latter part of the week the grain at the station was threshed.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the two-week period ending July 28 was 95, with a maximum of 106; the average minimum was 62, with a minimum of 52°. The rainfall amounted to 0.27 inch, making a total for the season of 7.25 inches and a total for the month of July of 0.52 inch. The evaporation during the period was 4.828 inches or a daily average of 0.344 inch. The wind movement averaged 5 miles per hour.

The first week of this period was the hottest ever recorded at this station, the average maximum being 102°. The average for the second week, however, was only 88°. The rainfall for the month has been only about one third of normal.

Water was run continuously during the first week of this period, and sugar beets, corn, beans, and alfalfa in fields K and E were irrigated. The alfalfa in field H was used for night runs part of the time, and most of it was covered.

The grain plots in fields K and E and the larger fields were harvested, and the second cutting of alfalfa was cut and shocked.

Work on the potato cellar has been continued; the forms were built and the concrete for the walls has been poured. The concrete for the pillars and for part of the flooring will be run next week, and work on the roof will be started.

Mr. S. H. Hastings, of the Washington office, visited this station again on his return to Washington.

James A. Holden.

Yuma

Report for the two-week period ending July 14

June was the first month of this year that the maximum temperatures were below normal. The accumulated excess for the year to date has reached 809°. The rainfall for the first six months, as reported by the weather station at Yuma, was 0.39 inch. The rainfall at Yuma Field Station for the same period was 0.64 inch. The two stations are only 8 miles apart, but the rain came in local showers, which account for the difference of 0.15 inch.

The maximum temperature for the two-week period ending July 14 was 117, mean maximum 109, minimum 68, mean minimum 74.8, and the greatest daily range 43°. The temperatures are slightly above normal.

The water situation in the Southwest has become very serious because of the very light snowfall on the upper watershed of the Colorado River last winter and the lack of summer rains. The Colorado

Yuma (cont'd)

River has continued to fall at the rate of 200 second-feet a day, and on July 12 only 2400 second-feet were coming out of the Grand Canyon. After Yuma Valley and other irrigation projects along the river received their water, this left Imperial Valley 240 second-feet at Hanlon's Heading. Mexico receives one half of this before the water reaches Imperial Valley. This is barely enough to water the livestock. The water for drinking purposes is being brought in by railroad tank cars and trucks and amounts to about 200,000 gallons per day. It comes from Mecca 100 miles to the north and from Jacumba. The cities of El Centro and Brawley have enough storage water to last until about August 1.

To aid the Imperial Valley, Yuma Valley will start to prorate water on July 16. No water will be allowed for cover crops or for land under Government crop reduction contracts. Water for cotton and alfalfa is available only every other week. On the light sandy land the cotton will not go two weeks without wilting and shedding badly.

The Yuma Valley has an advantage over Imperial Valley in that it does not have to depend on irrigation water for livestock. Water can be obtained within 6 to 10 feet from the surface. However, to obtain water for irrigation in suitable gravel free from quicksand it is necessary to go to a depth of 90 to 120 feet. A few farmers are putting down wells to obtain irrigation water. The cost of a 12-inch well 100 feet deep is $2.00 per foot for digging and $2.00 per foot for the casing, which is more than most farmers can afford to pay.

The station work during the two-week period has consisted of planting grain sorghum and cutting alfalfa hay on the rotations, threshing alfalfa seed, cleaning ditches, filling in a break in the main ditch caused by a gopher hole, and general irrigating.

Real summer weather has prevailed during the two-week period ending July 28. The maximum temperature reached 116 and the mean for the period was 105.7°. The minimum was variable, ranging from 63 to 82, with a mean of 75.8°. The maximum of 116 on the 27th and a dry wind caused the cotton to wilt badly. The average velocity of the wind on the 27th was 4.1 miles per hour, and the relative humidity at one o'clock was only 7 percent.

The serious water shortage in the Yuma and Imperial Valleys has remained about the same. There was a rise of 200 second-feet in the Colorado River at Grand Canyon on July 15, which gave Yuma a rise of about 50 second-feet. The loss in head is due to the spreading out of the water and to the absorption of water by the dry river bed.

During the past four weeks the station has received only enough water for the cotton under the proration system. The cotton and alfalfa are to receive water only every other week; however, by using the water prorated for alfalfa the cotton has been irrigated each week. Because of the sandy land and the hot, dry winds it has been absolutely necessary to irrigate the cotton each week to prevent serious shedding of the bolls. However, the alfalfa is very dry and probably much of the young crop will be lost.

The unusually warm winter and spring have caused the dates to ripen two to four weeks early this season. This is not a desirable

Yuma (cont'd)

condition as the market demand is low at this time of the year. The dates are hard to handle and to store during this hot weather. There is an unusually large crop of dates this year.

Station work during this period consisted of thinning milo on the rotation, threshing alfalfa seed, cutting weeds, cultivating milo, and general irrigating.

Max E. Crannell.

Prosser

The temperatures for the week ending July 21* were as follows: Maximum 91, mean maximum 85.6, minimum 45, mean minimum 52, and the greatest daily range 41°.

Wheat plots were cut during the week. Other work consisted of routine plot irrigation.

A group of horticulturists, representing the States of Oregon, Washington, Idaho, Montana, and the Canadian province of British Columbia, visited the station during the week to observe experiments being conducted in orchard irrigation and potato fertilizing.

Wheat increased 5 cents in price during the week and is now 72 cents a bushel.

Carl A. Larson.

*This report was misplaced and for that reason appears here out of its regular order. It should have appeared at the top of page 49.

M I S C E L L A N E O U S

Mr. S. H. Hastings returned to Washington on July 26 from a Western field trip of a month's duration.

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Belle Fourche

For the week ending August 11 the maximum temperature was 98 and the minimum 55°. The precipitation was 0.19 inch.

The threshing of irrigated grains was completed on August 4. The yields were about average. The maximum yield of oats, 85 bushels per acre, was obtained in rotation 44; of wheat, 28.6 bushels per acre, in rotation 8F; and of barley, 45.8 bushels per acre, in rotation 49. The threshing of grains from the dry-land rotations was completed on Saturday.

During the week the potatoes, sugar beets, corn, alfalfa, and pastures were all irrigated.

Dr. C. E. Leighty and Mr. John Stephens, of the Division of Dry Land Agriculture, visited this station on Monday and Tuesday.

Beyer Aune.

Newlands

The average maximum temperature during the two-week period ending August 11 was 93, with a maximum of 98 on July 29; the average minimum was 54, with a minimum of 49° on August 4, 5, and 11. The mean temperature was 73.5°. There was no precipitation during this period, and the average hourly wind movement was 2.72 miles.

Second crop haying has been completed on this project. The average yield of the second crop was less than normal. At the station a yield 60 percent of normal was obtained, the reason for this lighter yield being a shortage of water. Only one irrigation was given to the second crop where normally two are required.

Yields of second crop alfalfa at Newlands station, 1934

Pounds per acre		
Maximum	Minimum	Average
3,679	1,011	2,074

Those farmers who have a little water remaining on their allotments are irrigating for a third crop of alfalfa, but very few have any water remaining. The station has enough water for one more irrigation. A very small yield of hay is expected from the third crop. The grain from the grain plots has been threshed.

Current prices being paid for agricultural products: Alfalfa hay $7.00 a ton, butterfat 22 cents a pound, eggs 22 cents a dozen, beef 4 cents a pound, and lambs 5 cents a pound. The price of hay may advance at any time.

Newlands (cont'd)

The Government has commenced purchasing cattle in this locality, this being a part of its program of drought relief. These cattle are being shipped into Reno for slaughter. There is a movement underway to have the slaughtering and the canning of meat for relief purposes done here.

E. W. Knight.

Prosser

Temperatures for the week ending August 4 were as follows: Maximum 96, mean maximum 86, minimum 46, mean minimum 52, and the greatest daily range 48°.

The reservoirs of the Yakima Valley irrigation system contained 596,218 acre-feet of water on August 3. There will not be a water shortage in the valley this year.

During the week ending August 4 699 carloads of produce were shipped as compared with 65 carloads shipped during the corresponding week last year.

Mr. M. C. Lane, Associate Entomologist, and Mr. Gibson, Assistant Entomologist, from the Wire Worm Investigations Laboratory at Walla Walla, visited this station during the week.

Temperatures for the week ending August 11: Maximum 92, mean maximum 87.3, minimum 48, mean minimum 51.4, and the greatest daily range 40°.

Work during the week consisted of cultivating and irrigating potato plots, threshing the wheat plots and alfalfa seed.

Wheat yields from irrigation plots, 1934

Acre-inches of water used	Bushels per acre	Number of irrigations	Tons of straw per acre
11.7	35.8	2	1.34
18.2	46.8	3	2.00
19.0	51.4	2	2.02
26.9	50.1	4	2.38
32.3	60.2	4	2.32

Yield of alfalfa seed from the A and B basin plots

Plot	Pounds seed per acre	Acre-inches of water applied	Date of irrigations
A-1	145.9	10.1	April 21, May 17, July 5
A-2	225.8	9.9	April 21, May 17, July 5
B-1	144.5	9.55	April 21, May 17
B-2	146.0	9.85	April 21, May 17

These plots were harvested on August 1 and threshed on August 10. The A basins are irrigated at the rate of 18 inches per season, and the B basins at the rate of 24 inches per season.

This year 1142 carloads of produce were shipped from the Valley during the week ending August 9 as compared with 142 during the corresponding period last year. The larger number this year is due to the advanced season.

Carl A. Larson.

Scotts Bluff

For the week ending August 4 the average maximum temperature was 100, with a maximum of 104 on two successive days; the average minimum was 61, with a minimum of 52°. The precipitation amounted to 0.26 inch, making a total of 7.51 inches for the season. The daily average evaporation was 0.378 inch. The average wind movement was 6.1 miles per hour.

This has been another extremely hot week. For the second time since the weather station in this valley was established the weekly average has reached 100°, both occurring during the present summer. July, with an average of 95°, is the hottest month ever recorded at this station and was 7° above normal for the 23-year period. The minimum average for the month was 60°. The minimum for the current month has been equalled in three other years and was exceeded by 1° in July last year. The mean temperature for the month was 7½° above the mean for the 23-year period.

Most crops are standing the heat and drought very well. Water was turned into the canal during the week and will be available for irrigation the last of the week. Water will be run continuously until the Pathfinder reservoir is emptied, which, it is estimated, will take about ten days or two weeks.

Preparations are being made for the annual picnic, to be held on August 16. The picnic grounds are being rearranged to afford more satisfactory facilities to those attending.

The work at the station has consisted of cultivating and hoeing the various crops and harvesting the second crop of hay. The yields varied from 0.46 ton an acre on one of the plots in rotation 71 to 1.96 tons in rotation 65, with an average of 1.35 tons an acre. Due to the shortage of water it was impossible to give all the plots a sufficient watering, and this is the cause of the wide variation in yields.

The average maximum temperature for the week ending August 11 was 94, with a maximum of 99; the average minimum was 61, with a minimum of 57°. The precipitation amounted to 0.06 inch, making a total of 7.57 inches for the season. The daily average evaporation was 0.259 inch. The wind movement averaged 4.1 miles per hour.

Most of the valley received good rains during the week. Scottsbluff and Gering had about an inch of rain, but the Sunflower section was outside the rain area. The weather has not been so warm, but where there was no rain crops are growing worse rapidly. Corn especially is burning and many fields were entirely destroyed before there was growth enough to furnish much forage. Quite a number of fields of early potatoes have not yet been harvested, as a new crop of tubers came on about harvest time and the growers seemed to think it would be profitable to leave the early potatoes in the ground until the second crop matured.

Work on the new potato cellar has continued. When completed it is to be 24 x 40 feet in size. Preparations for the picnic have continued and the new arrangements are almost completed.

Prices of feed grains have increased rapidly. Elevators are paying $1.40 for corn, and barley is selling for $1.20 a cwt. Not much hay has been sold in this section of the valley, but large shipments have been made from the lower valley. In the Nebraska district of the Great Western Sugar Company it is estimated that the yield of beets will be from 50 to 60 percent of the yield last year.

James A. Holden.

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Huntley

The maximum temperature during the two-week period ending August 18 was 101 and the minimum 46. There was no precipitation.

Drought and high maximum temperatures continued during this period with consequent continued demand for irrigation water. The supply of water for irrigation remains adequate. At no time during the season has there been a serious lack of water.

The demand for hay to be sent to drought areas is brisk, and several cars of alfalfa were shipped last week. The price is $10 per ton in the stack. Yellowstone County and five other counties in the eastern part of the State have been placed in the drought relief area, and cattle from these counties are being bought by the Relief Administration. Cattle in condition to be moved are being shipped to central points for slaughter. Crops and range conditions in other sections of the State are fairly good.

Station work included irrigation of alfalfa, sugar beets, and potatoes, and threshing of dry land grains. While yields were very low in most cases, some plots of wheat on fallow yielded from 10 to 14 bushels per acre.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending August 25 was 94.8, with a maximum of 97 on August 24 and 25; the average minimum was 52.7, with a minimum of 49 on August 23. The mean temperature was 78.7. The average wind movement was 1.58 miles per hour. There was no precipitation during this period.

On many farms of the project the third crop of alfalfa has a good start and is looking well. However, most of the farmers have used practically all the water allotted.

Prices of agricultural commodities: Butterfat, 27 cents per pound; eggs, 26 cents per dozen; hay, $7 to $8 per ton; beef, 4½ cents per pound; lambs 4½ cents per pound, and hogs 7 cents per pound.

The number of cattle purchased by the Government in this locality has been steadily increasing. To date approximately 500 have been shipped out.

An attempt to start a condensed milk plant on the project failed. Farmers were not willing to dispose of all their milk to the proposed plant even when a 5-cent advance over the San Francisco market price was offered. This would have resulted in no skim milk being available for hogs.

Newlands (cont'd)

Work at the station has consisted of moving the sand trap to a new location, constructing irrigation boxes, and dismantling the old silo. The last general irrigation of the season was given during the past week, the pastures receiving a goodly portion of the water.

The amount of water in the Lahontan reservoir, according to the latest report, is 7,631 acre-feet.

Grain Yields on the Newlands Field Station in 1934

	Yields per acre, bushels	
	Maximum	Minimum
Barley	29.6	13.8
Wheat	23.4*	10.1*

*Little Club variety

E. W. Knight.

Prosser

The temperatures for the week ending August 18 were as follows: Maximum 98, mean maximum 92.1, minimum 49, mean minimum 50.8, and the greatest daily range 44°.

Color picking of Jonathan apples started during the latter part of the week and has been finished for the first lot going into the early pool.

Work at the station this week consisted of routine irrigation and laboratory work. Construction of the new potato cellar is progressing rapidly and most of the soil has been removed for the pit.

Dr. M. J. Dorsey, Professor and Chief of Pomology, University of Illinois, visited the orchard irrigation plots during the week.

The temperatures for the week ending August 25 were as follows: Maximum 93, mean maximum 91, minimum 51, mean minimum 54.6, and the greatest daily range 43°.

The irrigation water was turned off at the station for two days due to a break in the Sunnyside Canal between Grandview and Prosser. Three corn plots received final irrigation during the week.

Many farm commodities made favorable increases in price during the week. Weekly shipments of produce from the Valley continued to be decidedly larger than last year. During the week ending August 23 752 carloads of produce were shipped as compared with 356 for the corresponding period last year.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending August 18 was 93, with a maximum of 97; the average minimum was 61, with a minimum of 51°. There was no precipitation. The average wind movement was 5.1 miles per hour.

Water has been run continuously throughout the week, using day and night irrigators. Small heads of water have been allowed; but by careful use of the available water all the potatoes in both the plots and fields were irrigated; the sugar beets received a light watering;

Scotts Bluff (cont'd)

most of the corn was watered and also some of the alfalfa. Water was shut out of the main canal and it is expected that it will be out of the laterals by Sunday morning.

The annual farm picnic was held on August 16 in connection with the annual potato tour. Dr. H. O. Werner, Horticulturist, and Dr. R. W. Goss, Plant Pathologist, of the Nebraska College of Agriculture; S. B. Nuckols, of the U. S. Department of Agriculture; Marx Koehnke, Certification Manager of the Nebraska Potato Improvement Association; Superintendent W. C. Edmundson of the Greeley (Colorado) Experiment Station; and F. W. Heppe, of Denver, Colorado, took part in a very interesting program. The 4-H club work was better attended and more interesting than at any other picnic in the past, although the total attendance was not so large. The crowd was estimated at about 3,000.

Work has been continued on the potato cellar with a small force of men.

The average maximum temperature for the week ending August 25 was 78, with a maximum of 93; the average minimum was 51, with a minimum of 42°. No precipitation was recorded at the station. The total evaporation was 1.688 inches. The average wind movement was 5.9 miles per hour.

The irrigation season on the Pathfinder Irrigation District closed last week. However, the water in the canal and laterals supplied the station until about midnight Sunday. Good use has been made of the last run of water and, all things considered, crops are looking very well at this time. The corn and potatoes have made a fast growth since they were watered. Timely rains would produce very good crops.

Threshing of grain was completed during the week. The yields of oats in field K varied from 4.4 bushels to 32.9 bushels an acre, and in field E from 3.1 to 16.3 bushels an acre. While these low yields were largely due to climatic conditions, the depredations of birds was also a considerable factor. The yields of wheat varied from nothing to 6 bushels an acre.

Quite a number of pumping plants have been installed during the summer, using water from wells of varying depths from surface wells to one over 100 feet deep. Some of them are giving good results.

The prices of farm products are not advancing in proportion to the prices of other commodities, with the exception of hogs. Butterfat is only 22 cents a pound, and eggs are selling for 12 to 15 cents a dozen. Most feed prices have doubled in the last six months. Alfalfa hay is priced at $12 to $15 a ton in the stack, but no sales are being made. Only those farmers who have their own feed are at all certain about feeding plans for the winter.

James A. Holden.

Yuma

For the two-week period ending August 25 the maximum temperature was 113, mean maximum 106.3, minimum 72, mean minimum 76.4, and the greatest daily range 35°. The weather has been average for this time of the year. The humidity has been high, with local showers to the east. The station received two showers of 0.01 inch each during this period.

Yuma (cont'd)

The flow of the Colorado River has increased in the upper and middle drainage areas due to rains in Arizona. The discharge at Grand Canyon was 3,010 second-feet on August 21, 2900 on the 22d, and 2020 on the 23d. This rise will reach Yuma about the 28th. At present the Imperial Valley is getting only 295 second-feet, which hardly takes care of the domestic demands.

The cotton picking on the project is well under way. The water shortage has caused the cotton to open up early. How much the quality of the fibre is impaired is not known. In cases where the cotton was not irrigated for several weeks there will probably be much weak fibre.

The cotton committee has been busy the last two weeks signing up the farmers under the Bankhead Act. It was necessary to rush this work as the law requires all growers to be signed up before any obtain their tags to sell the cotton. The Arizona cotton growers received their tags a few days ago.

The alfalfa seed is about all threshed. The lack of rain has made an ideal season to harvest the seed. The yields have varied widely, the highest being close to 600 pounds per acre. The demand for seed has been good.

The State Emergency Relief Administration work is progressing nicely. This project, for which $1870 was set aside, has consisted of trimming dates, laying sewer line, shaping up ditch banks, digging out mesquite on E 40-45 and F, and chopping weeds out of cotton. Another project for cementing ditches has been submitted.

Station work during this period, in addition to that discussed in the preceding paragraph, has consisted of taking field notes, hoeing cotton, general irrigating, cutting sand-burrs out of alfalfa, cultivating milo, hauling date leaves, picking dates, etc.

Max E. Crannell.

WEEKLY REPORTS

Of The Division Of
WESTERN IRRIGATION AGRICULTURE
Bureau of Plant Industry
United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVI September 1, 8, and 15, 1934 No. 17

Belle Fourche

For the week ending September 15 the maximum temperature was 94 and the minimum 29°. The precipitation was 0.21 inch. The first killing frost occurred on September 14 when the temperature went down to 29°.

During the week the third cutting of alfalfa was harvested and also the silage corn.

The drilling of the artesian well is progressing as fast as could be expected. The Pierre shale was estimated at 1900 feet, but the actual depth was 2100 feet. The Niobrara shale was estimated at 200 feet, but the actual depth was 130 feet. The Carlile shale was estimated at 560 feet, the actual depth was 170 feet. The Dakota sandstone was encountered at 2400 feet and carries considerable water, but does not have enough pressure to come to the surface. At this time the well is down 2445 feet, and the water is within 100 feet of the top of the ground. The drilling will be continued to the next water-bearing sand, the Lakota.

Mr. F. A. Hayes, of the Bureau of Chemistry and Soils, has been at the station for a week investigating the problem of selenium poisoning for the South Dakota Rehabilitation Corporation.

Beyer Aune.

Huntley

The maximum temperature during the week ending September 15 was 91 and the minimum 30°. The precipitation was 0.46 inch. A rainfall of 0.46 inch on September 14 was followed by a light frost, which did only very slight damage to the more tender garden crops.

Irrigation of all late crops was completed during the week. Sugar beet harvest will begin about October 1. Due to curly top injury and unfavorable seasonal conditions, the crop will probably average only about 10 tons per acre as compared to 14 tons per acre in 1933.

Alfalfa hay is selling at $12 to $14 per ton on farms and feed grains, including oats and barley, at $1.50 per cwt. The potato crop locally is short due to damage from Rhizoctonia. The price of potatoes is $1.50 per cwt.

Station work included irrigating beets and harvesting the third cutting of alfalfa.

Summary of yields of oats in the irrigated rotations in 1934

Bushels per acre		
Maximum	Minimum	Average
102.5	22.0	67.2

Huntley (cont'd)

Summary of yields of wheat in the irrigated rotations in 1934

Bushels per acre		
Maximum	Minimum	Average
42.1	3.7	20.7

Summary of yields of flax in the irrigated rotations in 1934

Bushels per acre		
Maximum	Minimum	Average
24.7	2.3	13.5

Dan Hansen.

Newlands

For the three-week period ending September 15 the average maximum temperature was 87, with a maximum of 95 on August 26; the average minimum was 49, with a minimum of 38 on September 9, 13, and 14. The mean temperature was 68. The average hourly wind movement was 1.95 miles. There was 0.28 of an inch of precipitation.

Work at the station during this period has consisted of filling in old drain ditches, leveling land, and the general routine about the buildings and grounds. Third crop haying has begun, and it has been estimated that the yield will be 50 percent of normal.

Cattle and sheep continue to be purchased by the Government under the drought relief program. To date 463 cattle have been bought and 23 condemned; and 1,000 sheep have been shipped out. Range pastures are in poor shape for the State as a whole, but some pastures in this county are in fair condition. Under the F.E.R.A. several wells have been drilled at strategic points in the county for watering livestock. One well near the northeast end of Carson Sink has an artesian flow. Other wells are being developed in the eastern part of the county where water is scarce.

Local prices of farm products: Alfalfa hay, $8 to $9 per ton in the stack; beef, 4 to 5 cents per pound; hogs, 7.25 cents per pound; sheep, 4 to 5 cents per pound; butter, 27 cents per pound; and eggs, 27½ cents per dozen.

The Lahontan reservoir contains 5,187 acre-feet of water. Very little water is being released, the amount depending upon the demand of those who have not used all of the water remaining on their allotment.

Mr. Knight is at present making a tour of several field stations of this Division.

C. L. Moon.

Prosser

The temperatures for the week ending September 1 were as follows: Maximum 96, mean maximum 92, minimum 52, mean minimum 57, and the greatest daily range 41°.

Market prices: No. 1 alfalfa hay, $11 per ton in the stack; choice hogs, 165-210 pounds, 7 cents per pound; potatoes, $9 to $11 per ton, sacks furnished, f.o.b. car.

The temperatures for the week ending September 8 were as follows: Maximum 97, mean maximum 87, minimum 49, mean minimum 53, and the greatest daily range 41°.

The third cutting of alfalfa hay was made on the irrigation plots the first of the week. The yield of hay on these plots has been very

Prosser (cont'd)

good this year. All plots received six irrigations.

Yields of hay on irrigation plots in 1934

Plot	Net acre-inches of water applied	Total tons per acre of field-dry hay
6	48.6	7.81
7	36.7	6.76
8	22.7	5.35

Apple picking was started during the week, and most of the Delicious variety are now in the packing house.

Mr. E. W. Knight, Superintendent of the Newlands Field Station at Fallon, Nevada, arrived for a visit at this station on September 8.

For the week ending September 15 the temperatures were as follows: Maximum 80, mean maximum 72.6, minimum 39, mean minimum 43.6, and the greatest daily range 41°. The average wind movement was 0.99 mile per hour. The average daily evaporation was 0.121 inch.

Corn harvest on the irrigation plots began the latter part of the week. Apple picking is progressing rapidly, only the Winesaps remaining to be picked.

U. S. No. 1 potatoes, having increased $2.00 per ton during the week, are now $14 to $15 per ton, sacks furnished, f.o.b. car.

Carl A. Larson.

Scotts Bluff

For the week ending September 1 the average maximum temperature was 88, with a maximum of 91; the average minimum was 52, with a minimum of 47°. The total evaporation was 1.763 inches. The wind movement averaged 6.1 miles per hour. The precipitation was 0.12 inch, making a total for the season of 7.69 inches.

The month of August continued hot and dry. The total precipitation was 0.47 inch as compared with an average of 1.75 inches and a rainfall of 2.16 inches last year. The average maximum temperature during the month was 90°, which was 5° above the average temperature of August last year and 5° above the average for the past 23 years. The average minimum was 57°, which was 1° above that of last year.

Work at the station has consisted of eradicating weeds, cleaning up the fields, and digging potatoes in the time-of-digging test. Work has been continued on the potato cellar, and excavation for the trench silo has been started.

Prof. H. P. Davis, chairman of the Dairy Husbandry Department of the College of Agriculture at Lincoln, visited the station during the week to confer with the Superintendent relative to enlarging the dairy investigations being conducted at the station.

The average maximum temperature for the week ending September 8 was 76, with a maximum of 89; the average minimum was 47, with a minimum of 37°. The precipitation amounted to 0.98 inch, making a total for the season of 8.67 inches. The average wind movement was 6.1 miles per hour. The total evaporation was 1.354 inches or a daily average of 0.193 inch.

Scotts Bluff (cont'd)

The rainfall during the week came in two showers: 0.47 inch on the 2d and 0.51 inch on the 8th. Both were gentle rains and fairly general over the project. This precipitation is of great benefit to potatoes and beets and to much of the corn. It was sufficient to start the pastures and to put the ground into good condition for fall plowing.

The harvesting of corn has started, also the filling of silos. Work on the potato cellar and trench silo was continued.

A purebred Holstein bull calf has been sent to the station from the Dairy Husbandry Department of the College of Agriculture at Lincoln. It will be kept here and used in the herd at this station next year.

The prices of farm products are gradually getting higher. Butterfat is now selling at 23 cents a pound and eggs at 22 cents a dozen. However, the price of feed has advanced more rapidly, so that the net income, at least for those who have to buy their feed, is not any greater. The farmers who are raising their feed are in a better condition. Hogs and cattle are bringing considerable profit to feeders in the valley, for heavy, well finished steers have been above $10 a cwt. and fat hogs around $8 a cwt.

For the week ending September 15 the average maximum temperature was 75, with a maximum of 88; the average minimum was 41, with a minimum of 26°. No precipitation was recorded during the week. The evaporation amounted to 1.331 inches or a daily average of 0.019 inch. The wind movement averaged 5.1 miles per hour.

The drop in temperature on the night of the 14th was the lowest ever recorded at the station at this time of the month. It was general over all the valley, some sections reporting as low as 18°. At Alliance the thermometer registered 24°. It has been estimated that the loss of potatoes will amount to from 50 to 100 bushels an acre. The moisture the first of the month had put the ground in excellent condition for growth, and farmers were much encouraged over the crop prospects. The vines were all frozen where the vine growth was light. The heavier vines furnished some protection to themselves, and a maximum of 50 percent of the vines are still in a growing condition.

Work at the station has consisted of putting corn in the silo. There was not enough corn this year to fill two silos. Some cane was used for silage.

Sugar beets are making fair growth, and the cooler weather the past two weeks has helped to conserve moisture in the ground.

James A. Holden.

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Vol. XXXVI September 22 and 29, 1934 No. 18

Huntley

During the two-week period ending September 29 the maximum temperature was 83 and the minimum 25. The precipitation was 0.43 inch. The total rainfall for September was 1.01 inch.

The precipitation of 0.43 inch occurred in the form of snow and was followed by freezing temperatures, which damaged to some extent the third cutting of alfalfa. Some damage resulted to unthreshed beans in the field, but the bulk of the crop has been stacked or threshed.

The yield of Great Northern beans is reported to be good and averaging from 1500 to 2000 pounds per acre. The price of beans has advanced to $3.75 per cwt. from the low of $1.25 last season.

Alfalfa hay is selling for $12 per ton in the stack. Feed grains, oats, and barley are selling for $1.50 a cwt. Butterfat is bringing 23 cents a pound and eggs 25 cents a dozen.

The sugar beet harvest is scheduled to begin on October 1. It has been estimated that the average yield in the district will be 10 to 11 tons per acre. It is probable that the price of beets will be approximately $7 per ton. Due to high prices of feed crops very little local feeding of sheep and cattle is being undertaken; the surplus feed is being shipped to drought areas in adjoining States.

Station work during this period included harvest of third cutting alfalfa and plowing of stubble land.

Messrs. F. E. Schmidt and John Haw, of the commission investigating reclamation projects, visited the station on September 26. They were accompanied by Geo. O. Sanford, of the Bureau of Reclamation, and Director F. B. Linfield and J. W. Monson, of the Montana Agricultural Experiment Station.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending September 29 was 74.8, with a maximum of 91; the average minimum was 40, with a minimum of 21. The mean temperature was 57.9°. The wind movement averaged 3.19 miles per hour. There was no precipitation.

After an absence of four weeks the superintendent returned from a 4300-mile journey, during which he visited the Cheyenne Horticultural Station; the Scotts Bluff, Belle Fourche, Huntley, Prosser, and Umatilla Field Stations of this Division; and the Chico Plant Introduction Gardens. Some of the country passed through was suffering greatly from drought. The irrigated areas were as a whole the best agricultural sections seen. Many ideas and items of interest were obtained from each station visited. Such trips are well worth taking.

Newlands (cont'd)

Practically all the water in the storage reservoir on this project has been used. A slight flow from bank storage is so small that it is of little benefit. Unless rains soon come it is thought that some of the alfalfa on the lighter soils of the project will winter-kill. The last irrigation was given the alfalfa on the station during the latter part of August. It is hoped this will be sufficient to meet plant requirements until the fall rains occur.

Some work is now being done with the tractor in leveling the area started last winter under the C.W.A. program. There are some 20,000 cubic yards of dirt yet to be moved and about a mile of ditches to construct.

E. W. Knight.

Prosser

The temperatures for the week ending September 22 were as follows: Maximum 85, mean maximum 74.6, minimum 40, mean minimum 45.1, and the greatest daily range 32°. The rainfall amounted to 0.28 inch. On September 22 the reservoirs of the Bureau of Reclamation still held 304,679 acre-feet of water, which is being released from the reservoirs at the rate of about 2700 acre-feet per day.

The corn on the irrigation plots was harvested.

The temperature for the week ending September 29 were as follows: Maximum 78, mean maximum 66, minimum 34, mean minimum 39, and the greatest daily range 39°. The average wind velocity was 1.93 miles per hour. The evaporation from free-water surface was 0.769 inch.

Work included shelling corn from the irrigation plots and the usual laboratory routine.

The price of No. 1 potatoes declined $2.50 per ton during the week and is now $10 to $11.50 per ton f.o.b. car.

Mr. R. A. Work, Associate Irrigation Engineer from the Medford (Oregon) Experiment Station, visited the station to inspect the orchard irrigation plots.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending September 29 was 57; the average minimum was 31, with a minimum of 20°. The wind movement averaged 7.8 miles per hour. The evaporation totaled 0.887 inch. The precipitation, in the form of snow, amounted to 0.03 inch. The total precipitation for the growing season was 8.93 inches as compared with 11.57 last year, and a 25-year average of 11.60 inches.

Potato harvest throughout the valley commenced this week. The temperature dropped to 27° on the night of September 24 and to 20° on the night of September 25, and all growth was completely killed. Except for a few fields favorably located, the yields of potatoes have been considerably below the average. The potatoes are small and of only fair quality.

Work at the station has been mainly preparing machinery for the potato harvest to commence next week and getting the lamb feeding pens

Scotts Bluff (cont'd)

ready for use. The bins are being built in the potato cellar, which will then be ready for storing the potatoes. The excavation for the trench silo is completed, and most of the gravel is on the ground for lining the sides with concrete.

James A. Holden.

Yuma

Under date of September 19 Mr. Noble reported as follows:

"Mr. Townsend is here fixing the cotton gin, which will probably be ready to resume work tomorrow. The cotton has been coming in so fast that it may be necessary to put on an extra shift.

"The 25-acre pure seed block on the Cooch place indicates a yield of more than a bale to the acre. Our better rotation plots are yielding about 1500 pounds of seed cotton per acre on the first picking. The plants are fairly well matured.

"For the past three weeks water has been available in any amount needed, and many of the plantings that have suffered have been well irrigated. It is reported that a reduction of 4 to 3 acre-inches per irrigation will be made next week. The water released by the maturing cotton crop has been used in most cases to freshen up the alfalfa fields and to prepare some dry land for lettuce and peas. The area in lettuce on the project will probably be in excess of 7000 acres.

"The State Emergency Relief Administration has approved our ditch lining program, and 30 men have been employed on it since the middle of last week."

M I S C E L L A N E O U S

Mr. S. H. Hastings left Washington on September 29 for a western field trip. His itinerary includes the following places: Newell, S. D.; Riverside, Calif.; Bard, Calif.; Phoenix, Ariz.; El Paso and San Antonio, Texas.

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Vol. XXXVI October 6 and 13, 1934 No. 19

Belle Fourche

During the week ending October 6 the maximum temperature was 79 and the minimum 31. The precipitation was 0.75 inch.

In drilling the deep well at this station when the Lakota sandstone was encountered at a depth of 2540 feet the water rose to within 75 feet of the surface. The Lakota sandstone was 35 feet thick. A trace of gas was encountered at 1650 feet. The Dakota sandstone, which is 50 feet thick, was penetrated at 2400 feet and the water rose to within 300 feet of the surface. Below the Dakota sandstone the drill went through 90 feet of Fuson shale. The total depth of the well to date is 2580 feet. At present the drilling operations have been stopped pending decision whether to drill to the next sand, the Minnelusa, or to install a pump.

The lamb-feeding experiments at this station were started on September 21 when 700 lambs were divided into seven lots of 100 each. They are being fed the following rations:

Lot 1. Shelled corn, alfalfa hay.
Lot 2. Shelled corn, mono-calcium phosphate, alfalfa hay.
Lot 3. Shelled corn, Sudan grass hay.
Lot 4. Shelled corn 4 parts, cottonseed cake 1 part, Sudan grass hay.
Lot 5. Shelled corn, Amber cane.
Lot 6. Shelled corn, wheat grass hay.
Lot 7. Shelled corn 4 parts, cottonseed cake 1 part, wheat grass hay.

All the lots are fed the same grain ration, shelled corn. Comparison will be made of alfalfa hay, Western wheat grass hay, Sudan grass hay, and Amber cane. In two of these lots a supplement of cottonseed cake is used.

When started on feed the lambs weighed an average of 69.87 pounds.

Beyer Aune.

Newlands

During the two-week period ending October 13 the average maximum temperature was 77, with a maximum of 86 on September 30; the average minimum was 37.5, with a minimum of 31° on October 3 and 5. The mean temperature was 57.3°. The wind movement averaged 2.05 miles per hour. The precipitation amounted to 0.18 inch.

Butterfat is selling for 28 cents a pound. Alfalfa hay in the stack is bringing $9 per ton.

Newlands (cont'd)

A light rain on October 7 refreshed some grain and pastures that were in need of moisture. Some of the dry areas needed plowing, but without moisture it was almost impossible to do so. At the present time it is raining again.

About 1100 cattle have been shipped out under the drought relief program. This resulted in culling from the herds some of the low-producing cows.

The State Emergency Relief Administration has approved a project for additional work at this station on the incompleted CWA leveling of last winter. About 60 percent of the leveling has been completed. It is estimated that it will require the use of 32 horses and 16 men working 30 hours a week for eight or nine weeks to complete the job.

The irrigation district has undertaken the cleaning of an open drain that runs along the south side of the station area, in compliance with a request of the Federal Land Bank. This work must be done before loans can be made on several farms lying west of the station. It is expected that this cleaning program will have some effect on the underground water of the station area.

Summary of yields of third-crop alfalfa at this station

Pounds per acre		
Maximum	Minimum	Average
4,228	910	1,710

E. W. Knight.

Prosser

The temperatures for the week ending October 6 were as follows: Maximum 83, mean maximum 73.4, minimum 35, mean minimum 42.1, and the greatest daily range 38°. The wind velocity was 0.73 mile per hour, and the evaporation was 0.665 inch.

A load of choice hogs, 165-210 pounds, recently sent to market from the station, brought 5½ cents per pound.

The temperatures for the week ending October 13 were as follows: Maximum 85, mean maximum 76, minimum 36, mean minimum 40.4, and the greatest daily range 38°. The average wind velocity was 1.09 miles per hour. Evaporation amounted to 0.606 inch.

On October 13 the reservoirs held 258,842 acre-feet of water as compared with 356,257 acre-feet at this time last year. The reservoirs were full at the beginning of the season, but as there was no snow in the mountains to supply run-off water, storage water had to be used practically all the season.

Yield of corn from the irrigation plots

Plot No.	Net acre-inches of water applied	Loss of reserve moisture, acre-inches	Number of irrigations	Bushels of corn per acre
1	10.89	4.23	2	39.4
2	5.02	7.13	2	35.9
3	28.96	4.66	3	42.4
4	14.85	2.34	3	45.2
5	22.45	2.50	3	43.75

Prosser (cont'd)

All of the plots received 4-inch irrigations the first part of July. Plots 3, 4, and 5 received 10, 5, and 9 acre-inches, respectively, on each of the two remaining irrigations. On these plots a heavy irrigation did not result in as good a yield as a lighter irrigation.

The price of No. 1 potatoes declined $2 per ton and is now $9 to $11 per ton.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending October 13 was 80, with a maximum of 90; the average minimum was 38°. The velocity of the wind averaged 7 miles per hour.

During the week the harvest of potatoes was completed. The yields were extremely light, varying in field K from 29.3 bushels in the continuous plot to 165.3 bushels in rotation 64, and in field E from 18 bushels in rotation 49 to 137.3 bushels in rotation 41 in which sweet clover is pastured with sheep. The average yield of field K was 92.7 bushels an acre and of field E 54.7 bushels. The potatoes in field H, which were grown for seed, were much better, parts of the field yielding at the rate of 300 bushels or more per acre. Some of the potatoes on the Walker tract also yielded much better than the plots. The quality of the potatoes grown at the station is very good. They are small but smooth and free of scab. Even the short rotations are much better than usual.

The harvest of sugar beets commenced the last of the week. The indications are that there will be about half the usual tonnage. The reports received so far indicate that the sugar content is very good, varying from 16.5 to 16.8 percent. Reports from over the valley indicate that the sugar content is going to be about average, which is better than was expected.

The weather conditions have been very good for both potatoes and sugar beets. There have been several days of high winds but no moisture or freezing weather.

James A. Holden.

Yuma

Under date of October 10 Mr. Noble reported as follows:

"The flow of the Colorado River continues to be sufficient for present crop needs but not for new plantings. The water during the past month has been extremely silty, which has caused a decrease in the amount of water used to irrigate alfalfa, both on this project and in the Imperial Valley. The water not used on alfalfa has been applied to citrus orchards, asparagus, vineyards, and some new plantings of peas and lettuce.

"The present area planted to lettuce in the Imperial Valley is about 3600 acres, and it is expected that 3000 acres more will be planted. The present pro rata arrangement in that section will permit the planting of peas, lettuce, and flax on a small scale, even though some landowners have not sufficient water to cover permanent acreage, such as citrus, grapes, etc.

Yuma (cont'd)

"The movement of alfalfa seed to Imperial is an indication that more land will be seeded to alfalfa than usual. The brisk movement of seed has pushed the price up to around 13 cents a pound.

"Station work continues to hum on the cotton ginning, S.E.R.A. ditch work, and the seasonal harvesting of crops."

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M I S C E L L A N E O U S

A paper entitled "Absorbed Sodium in Soils As Affected by the Soil-Water Ratio," by Frank M. Eaton and V. P. Sokoloff, has been submitted for publication in SOIL SCIENCE.

Mr. S. H. Hastings will return to Washington on October 26 from a western field trip.

W E E K L Y R E P O R T S

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Vol. XXXVI October 20 and 27, 1934 No. 20

Huntley

The maximum temperature during the week ending October 20 was 72 and the minimum 30°. The precipitation was 0.02 inch.

Favorable weather conditions prevailed during the week, and good progress was made in the harvest of sugar beets and other crops. The beet harvest on the project is about two-thirds completed. The harvest was made somewhat difficult because of rain during the latter part of September, and on the heavier soils dirt tares are running as high as 30 percent. The yields and quality of potatoes in all parts of the valley are very poor due to damage from Rhizoctonia. This condition was general over the eastern section of the State as well as on the Shoshone project in Wyoming.

At the station the harvest of sugar beets and potatoes was completed. The yield of beets was the lowest on record here, due apparently to the effect of curly top, which occurred for the first time this year. Observations made during the growing season indicated that from 20 to 30 percent of the plants in most plots were affected by this disease.

Other field work at the station, including fall plowing, is nearing completion.

A summary of the yields of alfalfa, potatoes, and beans in the irrigated rotation experiments is given in the following tables.

Yields of Alfalfa
Tons per acre

	Maximum	Minimum	Average
First cutting	2.52	0.12	1.10
Second cutting	2.14	.68	1.34
Third cutting	1.90	.46	1.18
Total	6.54	1.22	3.37

Yields of Potatoes

Bushels per acre		
Maximum	Minimum	Average
349.3	11.3	124.0
Percent marketable		
90	0	51

Yields of Beans

Bushels per acre		
Rotation 12	Rotation 37	Average
25.5	41.5	33.5

Huntley (cont'd)

During the week ending October 27 the maximum temperature was 74 and the minimum 22°. No precipitation was recorded.

Weather conditions have continued favorable, and the harvest of sugar beets is nearing completion. The yield of beets in this district is averaging about 11 tons per acre and the sugar content 17.6 percent.

The final payment for the 1933 crop of beets was made on October 25. This payment amounted to 40 cents per ton and brought the total for the 1933 crop to $5.59 per ton.

The lamb-feeding experiment, conducted in cooperation with the Montana Agricultural Experiment Station, was started on October 9. In this experiment 300 range lambs of Rambouillet breeding, with an average weight of 71.5 pounds, were divided into ten lots of 30 lambs each and are being fed the following rations:

Lot 1. Oats, alfalfa
Lot 2. Oats, dried pulp, alfalfa
Lot 3. Oats, wet pulp, alfalfa
Lot 4. Barley, alfalfa
Lot 5. Barley, dried pulp, alfalfa
Lot 6. Barley, wet pulp, alfalfa
Lot 7. Barley, wet pulp, cottonseed meal, oats straw
Lot 8. Barley, wet pulp, cottonseed meal, dried pulp
Lot 9. Barley, wet pulp, mono-calcium phosphate, alfalfa
Lot 10. Barley, wet pulp, cottonseed meal, alfalfa.

Station work during the week included the plowing and manuring of fall plowed plots.

Sugar beets in the irrigated rotation experiment in 1934 gave an average yield of 7.82 tons per acre, which was about 4 tons per acre less than in 1933 and is the lowest average yield ever obtained in this experiment. This low yield was due to the effects of curly top and unfavorable weather. A summary of the yields of beets in the irrigated rotation experiment and in the fertilizer test in field C is given in the following tables.

Yields of Sugar Beets in Irrigated Rotations

Tons per acre		
Maximum	Minimum	Average
14.24	1.39	7.82
Percent tops		
53	20	34

The yields from the sugar beet fertilizer experiment ranged from a minimum of 19.03 tons per acre where 238 pounds of P_2O_5 was applied to a maximum of 21.64 tons per acre where only 95 pounds of P_2O_5 was applied. The mean yield of the 8 check plots was 16.28 tons per acre.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending October 27 was 61.9, with a maximum of 75; the average minimum was 36, with a minimum of 25°. The mean temperature was 48.9°. The wind move-

Newlands (cont'd)

ment averaged 2.73 miles per hour. There was 1.19 inches of precipitation.

Work at the station consisted of manuring plots K-7, K-8, and F-5; cleaning corrals; and cutting down trees that need to be removed.

Conditions on the project show a little improvement. Eggs are selling at 34 cents a dozen; butterfat at 29 cents, hogs at 6 cents, beef at 5½ cents, and lambs at 4½ cents a pound; and hay at $9 per ton in the stack.

The rainfall of 1.19 inches during this period has been a great help to the winter pastures. Most farmers are busy plowing, as the weather is ideal for such work.

A new bull, 6½ years old, was received from the Huntley (Montana) Field Station for use at this station. He is one of the proven sires used at Huntley.

The land leveling is progressing satisfactorily, with 36 horses and 17 men engaged. There are two crews, and each man is working 30 hours a week.

E. W. Knight.

Prosser

The temperatures at this station during the week ending October 20 were as follows: Maximum 69, mean maximum 63, minimum 29, mean minimum 37.4, and the greatest daily range 35°. The precipitation amounted to 1.02 inches. The wind movement averaged 1 mile per hour. The evaporation was 0.734 inch. The first frost occurred on October 16. There was a frost-free period of 148 days this year.

The potato irrigation plots in field E-5 have yielded from 9 to 9½ tons per acre, with very little difference between plots.

Market prices: Choice hogs, $4.50 per cwt.; butterfat, 26½ cents per pound.

Messrs. Gibson and Jones of the Wireworm Laboratory in Walla Walla visited the station during the week.

The temperatures for the week ending October 27 were as follows: Maximum 66, mean maximum 60.7, minimum 40, mean minimum 46, and the greatest daily range 22°. The rainfall amounted to .05 inch. The hourly wind velocity averaged 3.7 miles per hour. The evaporation was 0.377 inch.

The digging of potatoes was finished during the week. Cooperative work on wireworm damage to potatoes was carried on in field A-7. One plot was watered at 7-day intervals, 4½ acre-inches being applied at each irrigation; and the second plot was watered at 10-day intervals, 3½ acre-inches being applied at each irrigation. The plot receiving the heaviest irrigation, with the most frequent applications, showed 13 percent damage by wireworms, and the other plot showed only 8 percent damage.

Market prices: Average large white eggs, 32 cents per dozen; onions, sack furnished, $10 to $11 per ton, f.o.b. car.

Carl A. Larson.

Scotts Bluff

The average maximum temperature during the week ending October 20 was 67, with a maximum of 78; the average minimum was 44, with a minimum of 39°.

Scotts Bluff (cont'd)

The sugar beets in fields K and C were harvested during the week. The yields were about half what would be expected under normal conditions, varying from about 2.65 tons in the continuous plot to 14 tons in the second year beets in rotation 71 (receiving manure), with an average of about 9 tons for the field. The exact yields are not available, for the weight of the samples taken has not been reported to the station.

Weather conditions have remained very favorable for harvesting, and approximately 50 percent of the beets have been delivered. The sugar content remains higher than was expected. The highest for station beets up to the present time was 18.7 percent from rotations 31, 60, 61, and 62 - all high-yielding plots. The sugar content from the short rotations was considerably lower.

During the week ending October 27 the average maximum temperature was 68, with a maximum of 75; the average minimum was 31, with a minimum of 25°. The average wind movement was 9.2 miles per hour. There was no precipitation.

The sugar beet harvest at the station was completed during the week. The yield of field E was considerably lower than the yield of field K. The total yield this year is only a little over half that of last year on approximately the same acreage.

About 92 percent of the sugar beets in the Nebraska district have been harvested. Final figures are not yet available, but the indications are that while the yield will be low, the sugar content will be higher than last year.

A good many feeders are starting lambs on feed. Most of the lambs have been bought on the range and have cost from $4.50 to $4.75 a cwt. at the shipping point. The cost of feed is going to be high. Hay is selling at $10 to $12 a ton in the stack. Barley is costing $34 a ton and corn $35. Dried molasses pulp in bulk is worth $18 a ton and cottonseed cake $46 a ton.

The yields of alfalfa, oats, and wheat at this station in 1934 are summarized in the following tables.

Yields of Alfalfa

	Tons per acre		
	Maximum	Minimum	Average
First cutting	2.48	1.60	2.02
Second cutting	1.96	.46	1.35
Third cutting	1.84	.56	1.45
Total	6.22	2.70	4.78

Yields of Oats in Field K

Bushels per acre		
Maximum	Minimum	Average
32.9	4.4	15.0

Yields of Wheat in Field K

Bushels per acre		
Maximum	Minimum	Average
4.9	0.2	3.3

Scotts Bluff (cont'd)

Yields of Oats in Field E
Bushels per acre

Maximum	Minimum	Average
16.3	3.1	9.9

James A. Holden.

Yuma

During the two-week period ending October 20 the maximum temperature was 103, mean maximum 92, minimum 48, and the mean minimum 58°. No precipitation was recorded.

Clear days, with occasional drying winds, have made it ideal weather for cotton picking. The four gins operating on the project have ginned a total of 6,025 bales to date. Most of the cotton acreage has been picked for the first time.

The early plantings of grain sorghums are being harvested. Grain in the head is bringing $30 per ton. Although lettuce planting continues on a small scale, most of the acreage has been planted and is up to a fair stand.

Very little hay is available for shipping. Latest prices per ton are around $15 for baled alfalfa hay and $7 for alfalfa straw. The demand for alfalfa seed has been much better this fall than it has the past two seasons. Good, bright seed is selling at $15 per cwt. Butterfat is 30 cents a pound and eggs 30 cents a dozen.

Water conditions in the Colorado River have been more favorable than earlier reports indicated. Rains in the upper river regions have occurred at opportune times to maintain a flow at the Laguna Dam diversion sufficient for most needs on this project. The diversion for the Imperial Valley during the past two weeks has been approximately 1,000 second-feet. This amount is about one fifth of normal requirements and will reduce materially the acreage to be planted to lettuce, flax, and winter grains.

Station work has included the ginning of cotton, plowing alfalfa plots in the rotations for fall grain, cutting alfalfa, planting vetch and field peas, and general irrigating and cultivating.

Approximately 1,400 feet of ditches have been concreted with S.E.R.A. labor. This work will continue until an additional 2,000 feet have been completed.

Mr. S. H. Hastings was a station visitor October 12 to 14. Messrs. Townsend, Richmond, and Fulton, of the Division of Cotton and Other Fiber Crops, spent three days at the station ginning some special lots of long-staple cotton from the Salt River Valley.

E. G. Noble.

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Vol. XXXVI November 3, 10, and 17, 1934 No. 21

Belle Fourche

During the week ending November 10 the maximum temperature was 74 and the minimum 21°. No precipitation was recorded.

The harvesting of sugar beets at the station was completed on November 2. The maximum yield, 15.10 tons per acre, was obtained from rotation 21. The minimum yield, 1.17 tons per acre, was obtained from rotation 66, the beets following red clover. The average for all rotations was 8.19 tons per acre. This is 1.6 tons lower than the 23-year average. The average percentage of sugar was 19.6, which is 1.5 percent higher than the average for the 23-year period.

At this date the sugar beet harvest in the district is practically completed. The average yield will be about 10 tons per acre.

The weather conditions have been ideal, and all fall work is well along for this time of the year.

Beyer Aune.

Newlands

During the two-week period ending November 10 the average maximum temperature was 66, with a maximum of 74 on October 29; the average minimum was 34, with a minimum of 28° on November 5 and 9. The mean temperature was 50°. The wind movement averaged 1.88 miles per hour. The precipitation during this period amounted to 0.09 inch.

Hay is selling for $9.50 per ton in the stack, eggs at 37 cents per dozen, butter at 32 cents per pound; hogs at 6½ cents, beef at 5½ cents, and lambs at 5 cents per pound.

The field work at the station has consisted of plowing and manuring K-7, K-8, F-5, and releveling the B series. The fences that had to be removed while the drainage canal was being cleaned are being replaced.

The F.E.R.A. leveling project at this station is progressing satisfactorily. Approximately 9,000 cubic yards of dirt have been moved, one-fourth mile of irrigation ditch has been constructed, and some 40 or 50 trees have been removed.

During the night of November 11 a fire broke out in the dairy barn. There was little fire-fighting equipment on the station to combat a fire of this size. As a result, the silo, hay barn, dairy barn, granary, and 70 tons of hay - all owned by the State - were burned. In addition some equipment was destroyed: hay chopping machine, grain threshing machine, platform scales, and litter carrier. The insurance will cover about one third of the loss.

E. W. Knight.

Prosser

The temperatures for the week ending November 3 were as follows: Maximum 59, mean maximum 55.1, minimum 38, mean minimum 44.8, and the greatest daily range 19°. The rainfall amounted to 0.22 inch. The wind velocity averaged 1.66 miles per hour. The total evaporation for the week was 0.258 inch.

Work during the week included compiling crop records and irrigation data for the past season.

Market prices: Potatoes, $9 to $10 per ton, sacks furnished, f.o.b. car; onions, $11 to $12 per ton; hops, 15½ cents per pound baled, f.o.b. car; butterfat, 30½ cents per pound.

The temperatures for the week ending November 10 were as follows: Maximum 71, mean maximum 57.5, minimum 32, mean minimum 41, and the greatest daily range 27°. The rainfall amounted to 0.54 of an inch. The wind movement averaged 1.73 miles per hour, and the evaporation was 0.189 inch.

During the week the station received 1200 lambs, which are to be fed on contract during the winter. Feeding experiments will be conducted at the same time.

The temperatures for the week ending November 17 were as follows: Maximum 53, mean maximum 50, minimum 31, mean minimum 39, and the greatest daily range 19°. The rainfall amounted to 0.1 of an inch, with five rainy days during the week. The mean wind velocity was 0.44 mile per hour, and the evaporation was 0.118 inch.

The season continues mild and the moisture above normal. Due to the wet weather there has been good pasture in the sage-brush for sheep. Peach trees are budding in some localities and lilac and snowball shrubs have started to bloom for the second time.

Activities during the week included the regular laboratory and office routine.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending November 10 was 65, with a maximum of 75; the average minimum was 28, with a minimum of 21°. The wind movement averaged 7.4 miles per hour.

The work at the station has settled down to the routine of caring for the livestock and cleaning out corrals. The working force has been reduced as two of the men quit at the close of the sugar beet harvest, and only the usual winter force is now employed.

The yield of sugar beets in field K this year varied from 2.69 tons an acre on the plot continuously in beets to 14.23 tons on the second year plot in rotation 71, with an average of 9.14 tons as compared with an average last year of 11.93 tons. The average sugar content of the beets this year was 17.04 percent as compared with 15.84 percent last year. In field E the variation was from 4.68 tons in rotation 46, where the beets follow oats, to 9.66 tons in rotation 41, with an average of 7.90 tons an acre as compared with 13.22 last year. The sugar content was practically the same both years.

The sugar factories are about through with this year's crop and some of them are ready to close now. Figures are not yet available on the yield or the sugar content for the district.

Scotts Bluff (cont'd)

For the week ending November 17 the average maximum temperature was 65, with a maximum of 70; the average minimum was 25, with a minimum of 18°. The wind movement amounted to 4.4 miles per hour. There was no precipitation.

The yield of corn on the plots in field K varied from 19.4 bushels an acre in rotation 16 to 38.4 bushels in rotation 62, with an average of 25 bushels. The quality of the corn was fair.

Concreting the driveway into the potato cellar was commenced this week.

The slicing of beets at the Mitchell and Lyman factories was completed this week.

The initial payment for the 1934 crop of beets by the Great Western Sugar Company was quite disappointing. The station received $4.10 for beets with a sugar content of 17.5 percent as compared with $4.50 for the same percentage last year, and $3.83 for 16.5 percent as against $4.00 for 16 percent last year.

The prices of farm products are holding up fairly well. Butterfat is selling for 28 cents and 31 cents per pound; eggs are holding steady at 28 cents per dozen. The top for hogs at Omaha is about $5.75 per hundred pounds. The station sold some of the hogs used in pasture tests this summer at the local stockyards for $5.40, which is a little above the Omaha price when freight charges are taken into consideration. Hay is selling at from $10 to $12 per ton in the stack.

James A. Holden.

MISCELLANEOUS

A manuscript entitled "Effect of Alfalfa and Farm Manure on Irrigated Crop Yields in the Great Plains Area," by Stephen H. Hastings, has been submitted with a view to publication as a technical bulletin of the Department.

Mr. C. S. Scofield will leave Washington on November 23 for Riverside, California, where he expects to be engaged in the activities of the Rubidoux Laboratory until next spring.

W E E K L Y R E P O R T S

Of The Division Of
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Vol. XXXVI November 24, December 1 and 8, 1934 No. 22

Huntley

During the week ending November 24 the maximum temperature was 55 and the minimum 9°. The precipitation was 0.04 inch.

There has been no rainfall of consequence since September. Winter wheat on dry lands is showing the effects of the continued drought in damage to stands.

Sugar beets from storage piles are being moved to the factory. The supply of beets will probably keep the factory in operation during the next month. The initial payment on the 1934 crop of beets was $4.25 per ton, which was 25 cents per ton less than in 1933. The uncertain future sugar market was given as the reason for this decrease in the initial payment. Additional payments for the crop may be made by the sugar company as the sugar made from the crop is marketed. Payments will also be made under the A.A.A. agreement with growers.

Weights of lambs in the feeding experiment, taken at the end of the first 30 days, indicate that they are making satisfactory gains. The average daily gain was 0.348 pound. The minimum gain, 0.244 pound, was in lot IV, which is fed barley and alfalfa; and the maximum gain, 0.506 pound, was in lot II, which receives oats, dried pulp, and alfalfa.

Station work during the week included repairing buildings and machinery and the routine of caring for the livestock.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending November 24 was 54.9, with a maximum of 68 on November 13 and 14; the average minimum was 29.9, with a minimum of 20° on November 24. The mean temperature was 42.4°. The wind movement averaged 2.37 miles per hour. The precipitation amounted to 0.27 inch.

At the station the K series, F-5, and the upper ends of the J plots have been plowed and disk harrowed. Digging ditches and putting in irrigation structures are also underway.

There has been very little change in the prices of farm products during the last two weeks.

Building plans for the construction of dairy barns and corrals, to replace those recently destroyed by fire, are being drawn by FERA architects at Reno. It is hoped that approval may be obtained for this reconstruction as an FERA project.

On the land leveling job at the station it is estimated that some 15,000 cubic yards of dirt have been moved in six weeks. The entire project is progressing satisfactorily.

Newlands (cont'd)

The average maximum temperature for the two-week period ending December 8 was 46.4, with a maximum of 62 on November 30; the average minimum was 15.8, with a minimum of 8° on December 3. The mean temperature was 31.1°. The wind movement averaged 2.26 miles per hour. There was no precipitation.

Some change has taken place in the prices being paid for farm commodities. Beef is selling at 4½¢, lambs at 5¢, hogs at 5¢, and butter at 32¢ per pound; eggs at 28¢ per dozen; and hay at $8 per ton in the stack.

The building of a new dairy barn and granary, to replace those destroyed by fire, was started on December 3 as an FERA project. The plans are to build a more modern dairy unit than was formerly used. The floors and feeding mangers will be of concrete and so arranged that they can be thoroughly scoured with water. The drainage from this cleaning will be run through a tile drain into a concrete cesspool. It is planned periodically to pump the contents of this pool into vats and haul out onto the plots growing crops. The west side of the barn is to have drop doors for feeding at the head of the feeding mangers, and the east side is to have sliding doors leading to the corrals. The barn roof will be of corrugated iron. The granary also will have a corrugated iron roof, a concrete floor, and sealed inside. The Reno FERA office has sent an architect here to supervise the work.

In the leveling work all the long hauls will be completed within the next two or three days, and from then on there will be short hauls made with 4-horse fresnos. It is estimated that about 20,000 cubic yards of dirt have been moved and that about one third of that amount remains to be moved.

Field work has included plowing, cleaning ditches, and putting in new irrigation structures.

E. W. Knight.

Prosser

The temperatures for the week ending November 24 were as follows: Maximum 59, mean maximum 52, minimum 31, mean minimum 36, and the greatest daily range 22°. The rainfall amounted to 0.06 of an inch. The wind velocity averaged 1.63 miles per hour. The evaporation was 0.165 inch.

The annual meeting of the Washington Irrigation Institute was held at Ellensburg, Washington, on November 23 and 24. The discussions this year were principally on problems within irrigation districts, with particular emphasis upon irrigation law and refinancing.

The temperatures for the week ending December 8 were as follows: Maximum 56, mean maximum 40.7, minimum 25, mean minimum 28.7, and the greatest daily range 24°. The average hourly wind movement was 1.44 miles per hour. The weather was foggy the latter part of the week with snow on the surrounding hills. At Snoqualmie Pass in the Cascade Mountains the snow is 18 inches deep at the present time.

The Farmers' and Homemakers' meeting this year was held at Pullman with the Washington State Horticultural Association. Many farmers from the Yakima Valley attended the meeting and took part in the discussion of farm problems.

The price of onions has advanced and is now $15 to $18 per ton.

Carl A. Larson.

Scotts Bluff

The regular reports from this station for the weeks ending November 24, December 1, and December 8 do not appear in this issue. For the past several years, under Mr. Holden's direction, the interesting reports from this station have been written and sent with great promptness and regularity to the Washington office by Mr. O. K. Barnes, who died of heart disease on November 22. He was 60 years of age.

Mr. Barnes was appointed Clerk of the Scotts Bluff Field Station in 1921, but resigned in 1927 to take charge of the Agricultural Division of the Chamber of Commerce of Witchita Falls, Texas. However, he returned to this station in 1930 to resume his former position, whose duties he was continuing to perform with his usual efficiency and fidelity at the time of his death.

S. H. Hastings.

Yuma

During the two-week period ending December 8 the maximum temperature was 77, mean maximum 69.2, minimum 31, and the mean minimum 37.1°. No precipitation was recorded. The first killing frost of the season occurred on the morning of December 3. This date is about two weeks later than normal.

Weather conditions have been favorable for the planting of fall crops and the harvesting of cotton and late alfalfa hay. Cotton is opening rapidly after the frost. If pickers are available, the whole crop should be in by the first of the year. The four gins operating on the project report that a total of 8,476 bales have been ginned to date. This is approximately two thirds of the crop.

Four carloads of garden peas were marketed before the heavy frost on December 3 ended the harvesting of the fall crop. Lettuce plantings are making a satisfactory growth and will be ready to start cutting in about two weeks.

For the first time since July the Colorado River has reached its normal seasonal flow. All pro rata regulations in force in the Imperial Valley have been removed, and water is available for almost all needs. This favorable situation is dependent on the precipitation in the upper river sections.

Construction equipment for the digging of the All-American Canal has been assembled and will be ready to operate next week. Three large drag lines, with buckets having a capacity of 12 cubic yards, will operate at Andrade, Araz Junction, and near the Old U. S. Acclimatization Garden. There will be a celebration on December 16 of this first construction work.

Station work has included supervising the SERA ditch lining project, picking and ginning cotton; repairing mess house, bunk house, and residence; plowing grain sorghum stubble plots, planting alfalfa and winter grains on the rotations, general cultivating and irrigating.

E. G. Noble.

JAMES A. HOLDEN

After a short illness Mr. James A. Holden died on December 6 of heart disease. He was born at Nephi, Utah, and was 52 years of age.

Graduating from the Utah Agricultural College with the degree of Bachelor of Science in 1911, he was appointed in August of that year as an Assistant in charge of irrigated crop rotation experiments at the Scotts Bluff Field Station. He was designated Superintendent of the station in January 1917, being promoted to fill the vacancy caused by the resignation of Mr. Fritz Knorr, and served continuously in that position until his death.

Mr. Holden established an enviable reputation throughout Nebraska, Wyoming, and adjoining States as an authority on farm management. His intensive and intelligent study of the subject resulted in developing improved farm practices that have had a profoundly favorable influence on agriculture under irrigated conditions in the Northern Great Plains. The fact that officials of the Nebraska Agricultural Experiment Station and the agricultural interests on the North Platte irrigation project regard the Scotts Bluff Field Station as indispensable to the continued agricultural success of the area may be chiefly attributed to Mr. Holden's unusually able direction of the activities of that station.

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Vol. XXXVI December 15, 22, and 29, 1934 No. 23

Huntley

The maximum temperature during the two-week period ending December 15 was 59 and the minimum 18°. There was a trace of precipitation. The weather continued dry and unusually mild for this season of the year, and has resulted in lower demand for feeds. The price of hay locally has dropped to $10 per ton.

A strike of employees at the local sugar factory resulted in closing the factory on December 10. The strikers demanded increased pay, a closed shop, and recognition of the union. The company and its employees have so far failed to reach an agreement; and the remainder of the season's crop of beets, amounting to 70,000 tons or 15 percent of the total crop, is being shipped to the refinery at Lovell, Wyoming, for processing.

The lamb-feeding experiment at the station will be closed on December 19. The results of the season's work will be presented by Prof. W. F. Dickson, of the Montana Agricultural Experiment Station, at a feeders' meeting to be held here on December 21.

The maximum temperature during the two-week period ending December 22 was 51 and the minimum 18°. The precipitation was 0.07 inch. The weather continued dry with comparatively high temperatures.

The lamb-feeding experiment that has been under way at the station, with the Montana Experiment Station cooperating, was closed and a feeders' day program was held on December 21. About 90 feeders and farmers attended this meeting and were much interested in the results of the feeding tests as presented by Prof. W. F. Dickson of the Montana Station.

No settlement was reached in the strike of employees at the local sugar factory; and the remainder of the sugar beet crop, amounting to 15 percent of the total crop, is being shipped to the refinery at Lovell, Wyoming, for processing.

A series of meetings to acquaint the beet growers of the section with the provisions of the A.A.A. beet marketing contract are being held by the County Agent, and it is expected that contracts will be offered to growers in the near future.

Station activities included caring for livestock and repairing some buildings.

Dan Hansen.

Newlands

The average maximum temperature for the three-week period ending December 29 was 48.3, with a maximum of 61 on December 26; the average minimum was 22.2, with a minimum of 8° on December 29. The mean tem-

Newlands (cont'd)

perature was 35.3°. The average wind movement was 1.59 miles per hour. There was 1 inch of precipitation.

The cold weather that has prevailed since the snowstorm on December 28 has about stopped work on the F.E.R.A. land leveling project. The wet soil has frozen so that it is impossible to use scrapers in moving dirt. Most of the horses and equipment hired have been released, but a few are being retained to move one small sandhill if the weather moderates. In the meantime some of the men are moving a few buildings that are in the way of the remaining leveling operations.

The rebuilding of the dairy unit will be completed in a few weeks. These new buildings will be a decided improvement on those that were destroyed by fire.

Most of the local merchants report the best December business they have had in several years.

The recent snowstorms have probably assured an adequate supply of water for irrigating purposes next year. Some 48 inches of snow has fallen on the higher elevations. As the snowstorms usually occur during January and February, plenty of time remains for more snow.

E. W. Knight.

Prosser

The temperatures for the week ending December 15 were as follows: Maximum 43, mean maximum 37.5, minimum 29, mean minimum 30.5, and the greatest daily range 13°. The rainfall amounted to 0.23 of an inch. The weather was foggy most of the week.

The offices at the station are being repaired and calcimined. The larger portion of the week was spent in planning crop rotations.

Temperatures during the two-week period ending December 29 were as follows: Maximum 59, mean maximum 45.9, minimum 25, mean minimum 31.8, and the greatest daily range 23°. The mean hourly wind movement was 4.13 miles. The rainfall amounted to 0.28 of an inch. There were 98 inches of snow in the pass of the Cascade Mountains on December 29.

The annual report of the Yakima Valley Traffic and Credit Association shows that the value of agricultural products in the valley increased this year $5,439,222 over 1933. All groups of farm commodities except vegetables and livestock showed an increase during 1934.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending November 24 was 49, with a maximum of 58; the average minimum was 20, with a minimum of 8°. The wind movement averaged 4.2 miles per hour. There was no precipitation.

During the week ending December 1 the average maximum temperature was 34, with a maximum of 43; the average minimum was 13, with a minimum of 10°. The wind velocity averaged 6 miles per hour. The precipitation of 0.02 inch, in the form of snow, was general over the valley as well as over all the State, but was much heavier in some sections

Scotts Bluff (cont'd)

than it was here.

Very little work was done by the men on the F.E.R.A. project.

The average maximum temperature for the week ending December 8 was 34, with a maximum of 41; the average minimum was 10, with a minimum of 3°. The wind movement averaged 9.4 miles per hour. There was only a trace of precipitation.

Mr. Chas. Hoff, Auditor from the University of Nebraska, came to the station on December 4, completed an audit and left on the 5th, but was called back on account of Mr. Holden's death, and remained at the station on the 7th and 8th.

The F.E.R.A. men worked on the new road and on the frost jackets or enclosures around the water supply tanks.

The average maximum temperature for the week ending December 15 was 48, with a maximum of 56; the average minimum was 20, with a minimum of 14°. The wind movement averaged 8.2 miles per hour. The precipitation was 0.01 inch.

Mr. S. H. Hastings, Principal Agronomist, arrived from Washington on December 10 to attend the funeral of Superintendent Holden and to make arrangements for carrying on the station activities. He left on the evening of the 12th.

Dean W. W. Burr, of the College of Agriculture, University of Nebraska, was here on December 12 and 13 to confer with Mr. Hastings in regard to filling the positions left vacant by the deaths of Superintendent Holden and Clerk Barnes.

Work was continued on the new road and on the frost jackets for the supply tanks. The F.E.R.A. labor will start on a general clean-up program next week.

Several carloads of dressed turkeys from western Nebraska and eastern Wyoming were shipped to the Christmas markets through the Poultry Association, 17,000 pounds being shipped from Gering. They were consigned with an initial payment of 20 cents per pound.

Hay is bringing from $12 to $14 per ton in the stack.

The average maximum temperature for the week ending December 22 was 38, with a maximum of 48; the average minimum was 18, with a minimum of 13°. The wind movement averaged 8.7 miles per hour. The precipitation was 0.15 inch.

Weather conditions have been rather unsettled. The wind movement averaged 13.1 miles per hour during the last 48 hours of the week, causing considerable shifting of sand, blowing of unprotected fields in the irrigated section, and some damage to winter wheat in the dry-land section.

The drought division of the A.A.A. purchased 330 cattle from 52 farmers in Scotts Bluff County, paying $3,936 for them. Of this number, 146 will be butchered by a local packing company for distribution to persons on the relief rolls in the county.

Potato growers and buyers met and adopted resolutions requesting the passage of a bill providing for compulsory federal-state inspection of potatoes, with the idea of developing an improved product.

Officials of the Great Western Sugar Company have signified their intention of beginning negotiations on the 1935 growers' contract

Scotts Bluff (cont'd)

as soon as possible after January 15.

The enclosures for the water tanks are nearly completed, the clean-up program has been started, and weeds have been burned when the weather would permit.

Potatoes are selling for $1.10 and $1.15 per cwt., but most farmers are holding for a better price.

The average maximum temperature for the week ending December 29 was 37, with a maximum of 45; the average minimum was 11, with a minimum of 3°. The wind movement averaged 9 miles per hour. The only precipitation was a trace in the form of snow.

The F.E.R.A. laborers have completed the water tank enclosures, burned weeds, torn up the old concrete floor of the hog pens which were removed to the Walker place, removed the timbers preparatory to filling in the old potato cellar, and are now resetting posts and strengthening the dairy corral.

Weather conditions the past week have been unsettled. High winds and dust-storms have caused some damage to unprotected fields and winter wheat.

Lionel Harris.

Yuma

During the two-week period ending December 22 the maximum temperature was 79, mean maximum 71.4, minimum 38, and the mean minimum 48°. The precipitation amounted to 0.58 inch. Temperatures above normal for this month have continued.

With higher minimum temperatures and the heavy rain on the 12th, growers were concerned about injury to the maturing lettuce crop. The acreage that was ready to harvest during this period is small compared with the production expected after January 1. About five cars are being shipped per day at present.

Cotton picking and ginning have been retarded by the rainy weather and the difficulty of obtaining pickers.

Work on the All-American Canal near Bard was started officially on December 16. Governor Merriam, of California, and other high State officials were present for the celebration.

Work on the station has included the picking and ginning of cotton; plowing and disking the rotations and planting them to alfalfa and barley; cutting the sixth crop of alfalfa; supervising the S.E.R.A. work on the ditches; general irrigating and hoeing.

Messrs. Madison, Briggs, Beyschlag, and Scott, of the University of California and Agricultural Extension Service, visited the station on December 20.

E. G. Noble.